Libra

User's Manual

Rev. G
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23/01/2020

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CE

This device is compliant with Directives 2001/95/CE [General Product Safety], 2011/65/UE [ROHS]. The compliance with Directive 2001/95/CE has been verified in accordance with the requirements of standard UNI EN ISO 20957-1.

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1. INTENDED USE AND GENERAL WARNINGS

Libra is an Electronic Balance Board with variable radius designed to improve balance and stimulate the proprioceptive system.

The dedicated software, with its rich and varied motivational feedback and the possibility of adjusting the instability, makes Libra a useful device for testing and training.
The possibility of stimulating proprioception, balance and neuromuscular coordination turns the workout with Libra a powerful mean to prevent ankle sprain. Exercises with Libra foster the expression of instantaneous force thus helping to shorten recovery times.
Data archiving allows scheduling tests and customizing the exercises.

This manual is intended for users as an indispensable reference for device operation and system maintenance. Be sure to follow carefully all warnings and instructions outlined.

Responsibilities of the manufacturer

Easytech declines any responsibility concerning the safety and functionality of **LIBRA** if:

- installation, modifications, maintenance and inspections are not carried out by personnel authorized by Easytech;
- the device is not used for the intended use or it is not used in accordance with the instructions provided in this manual.

2. SAFETY PRESCRIPTIONS

2.1 OVERALL

The LIBRA device has been manufactured in compliance with the Directives 2011/65/UE and 2001/95/EC and in particular in compliance with the UNI EN ISO 20957-1 Standard for "Stationary Training equipment".

However, the safety of use, both for the user and the operator, is not guaranteed unless the norms in terms of installation, safety notes and periodic inspections are observed.

In particular, attention is drawn to the following paragraphs concerning the electric safety and the safety from electromagnetic radiations.

2.2 WARNINGS FOR THE INSTALLATION

-Always check the integrity of the packaging and its content before installation.

- Install the Personal Computer to which Libra will be connected according to the instructions provided by the manufacturer.

-Place Libra on an even, smooth and adequately large floor.

-Position the supplied rubber mat under the Libra balance board.

-Check that the cable connecting Libra and the pc is intact. Do not use if it is damaged or worn-out.

-With the computer switched off, connect the cable of the board Libra directly to the USB port of the computer.

-Make sure that the connection cable between Libra and the pc does not interfere with the movements of Libra or makes sharp bends.

-Do not place Libra next to sources of heat; ensure installation in a adequately ventilated room.

-Libra is not a AP or APG device, it therefore must never be used in the presence of flammable substances.

-Avoid proximity to potential sources of electromagnetic interferences (such as portable and mobile RF communication equipment or electromedical devices that emit electromagnetic energy for therapeutic or diagnostic purposes) that may exceed the limits prescribed in the Standards and therefore exceed the immunity of the device.

-Avoid locations subject to rapid changes in temperature or humidity levels, dust, chemical fumes, shakes and vibrations.

-For the periodic inspections and maintenance, refer to the recommendations listed in the specific chapter.

-"WARNING: no alteration to the machine is allowed.

-"WARNING: do not modify this device without the manufacturer's authorization.

-"WARNING: in case of a change in the device, appropriate examinations and tests must be carried out in order to ensure the conformity to a safe use of the machine.

2.3 PRECAUTIONS FOR USE

The device is intended for use by qualified personnel only.
An adequate knowledge of the language of the place where the machine is in use is required.
Light visual or hearing impairment are admitted, a slight physical disability is also admitted as long as it allows to correctly positioning the device with respect to the user.

- Never open the closing cover in the lower part of the device, except for the maintenance operations described in this manual.
- For all operations of cleaning or maintenance, always refer to the relevant chapter.
- Do not spill or spray liquids on any part of the device
- Do not block the ventilation outlets or insert objects into them
- Frequently inspect the state of the apparatus Libra with a simple visual exam
- If the device has fallen, if the external casing is damaged, or if you suspect that the device is not working properly, contact Easytech technical support.

2.4 WARNINGS ON ELECTROMAGNETIC INTERFERENCES

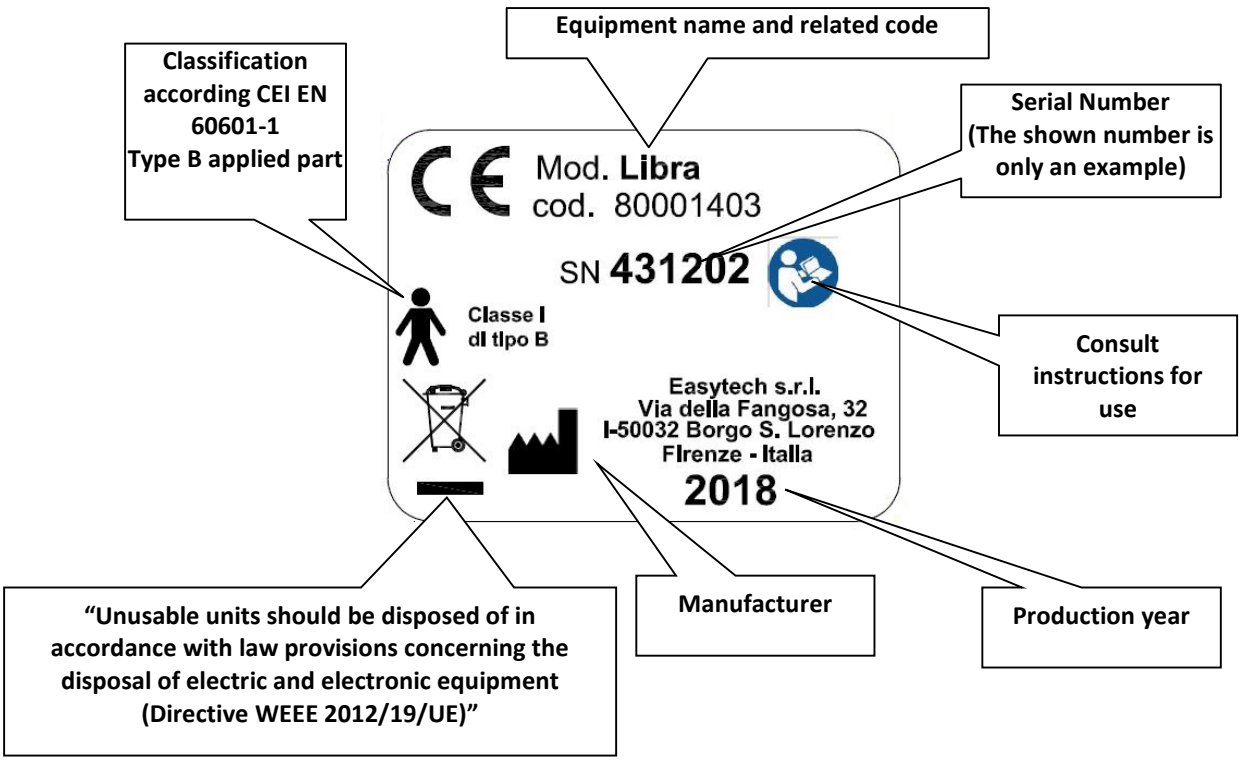
As previously mentioned in 2.2, every precaution must be taken to keep the probability of interfering the operation of other devices adequately low.
Electromagnetic incompatibility means that a device might have an effect on another or receives an interference by other machines. Such interference is not acceptable when it might jeopardise safety or any other essential function of a device.
Compliance to the Electromagnetic Compatibility Directive is ensured as the device is manufactured in compliance with the harmonized technical standards, in particular IEC 61000-6-1 and IEC 61000-6-3.

3. LEADING TECHNICAL FEATURES

Power supply:	supplied by PC USB port
Absorption:	less than 60 mA
Data transfer speed:	USB: 1.5 Mbit/sec
Dimensions:	420x430x65 mm
Weight:	3.5 Kg
Maximum patient's weight:	100 Kg
Movement range:	-15, +15 degrees
Maximum measurement error:	0.2 degrees
Storage temperature:	0, +40 °C
Operating temperature:	0, +40 °C
Relative humidity:	0 – 75% without moisture

Applied part type B

3.1 SYMBOLS ON THE LABEL


Equipment name and related code
Classification according CEI EN 60601-1 Type B applied part
Serial Number (The shown number is only an example)
Mod. Libra
cod. 80001403
SN 431202
Classe I di tipo B
Consult instructions for use
Easytech s.r.l.
Via della Fangosa, 32
I-50032 Borgo S. Lorenzo
Firenze - Italia
2018
"Unusable units should be disposed of in accordance with law provisions concerning the disposal of electric and electronic equipment (Directive WEEE 2012/19/UE)"
Manufacturer
Production year

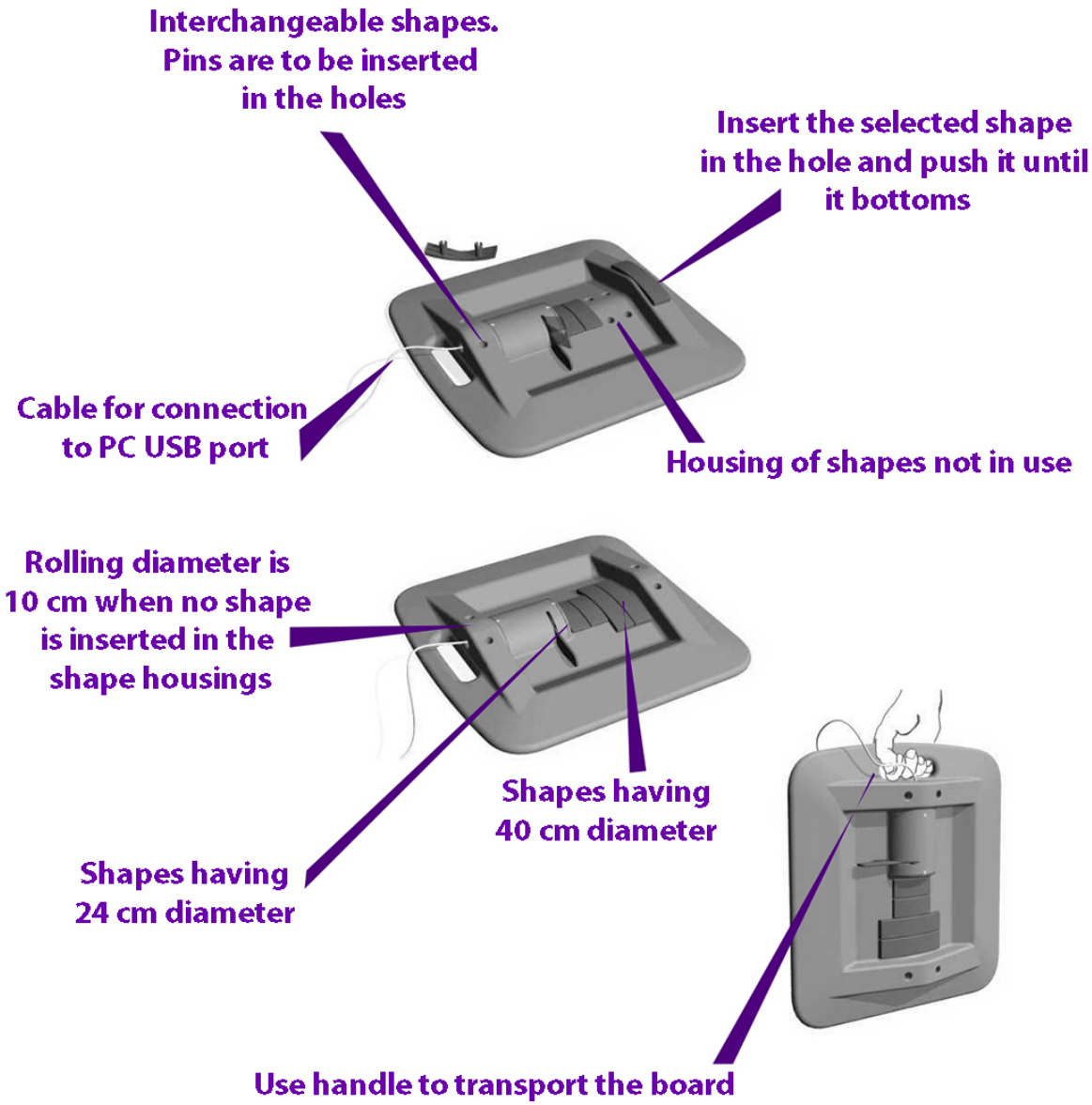
3.2 GENERAL DESCRIPTION

The following picture shows the tablet in ready-to-work conditions.
WARNING: the handle and the cable connected to the PC must be placed opposite the user.

The board is of the moving fulcrum type. As you can see in the following figure, the fulcrum changes along with the changes in board position.

The board rolls on balancing shapes that have a suitable diameter. Three pairs of interchangeable shapes are available.
The board is fitted with an encoder that detects its position. The encoder is operated through a lever that is in contact with the floor.
Attention: the lever must be unlocked manually before starting the exercise.
The encoder is connected to an electronic card that reads the angle of the board top surface with respect to the floor on which the board rests and sends the data to the PC through a USB port.

The following pictures show the board bottom. Note the interchangeable shapes in their operating and stowed positions, as well as the encoder lever in the operating and rest positions.



Fit shapes having the same diameter on both sides.

The operating program is able to automatically recognize the pair of fitted shapes.

3.3 OPERATING CRITERIA OF THE APPLICATION SOFTWARE

The graphic interface of the balance board has been developed using the characteristic graphic interactive controls of Windows operating environment.
The dialogue between the board and the operator is based on the use of multiple menu screens, where a certain number of functions is clustered and refers to one specific operating theme.

The transition from one topic to another takes place by selecting the appropriate operating mode starting from the initial page of the application software, as shown in the image below:

Each screen has a series of controls that are self-explanatory and easy to understand.
The "Advanced Environment" screen present a series of "buttons" with are contained in the Activation Bar: this bar, which is visible on the upper edge, shows the Buttons from time to time, each of which is associated with one of the themes logically available, this simplifying the "navigation" between the functions that the board makes available to users.
Each button, if the mouse is positioned on it without clicking, shows a brief description on the function associated with it.
This manual maintains the same type of logical organization. Therefore, each section is associated with a screen and contains the description of the commands and functions it contains.

4. INSTRUCTIONS FOR USE

4.1 MINIMUM REQUIREMENTS FOR PERSONAL COMPUTER

Libra software requires a desktop or laptop PC with the following requirements:

- Operating System: **Windows 7, 8, 8.1, 10**
- Minimum processor requirements: **Intel i3**
- Minimum RAM requirements: **4GB**
- Minimum monitor resolution: **1366 x 768 pixel**
- Minimum requirement for graphics card: **OpenGL ver. 3.0**
- Printer: compatible with personal computers and operating systems
- Minimum requirement for USB port: **USB 2.0**

ATTENTION: The software is compatible only with 64 Bit systems

4.2 PRELIMINARY OPERATIONS

- Install the Personal Computer to which Libra will be connected according to the instructions provided by the manufacturer.
- Place Libra on an even, smooth and adequately large floor.
- Position the supplied rubber mat under the Libra balance board.
- Check that the cable connecting Libra and the pc is intact. Do not use if it is damaged or worn-out.
- With the computer switched off, connect the cable of the table Libra directly to the USB port of the computer.
- Make sure that the connection cable between Libra and the pc does not interfere with the movements of Libra or makes sharp bends.

4.3 SOFTWARE INSTALLATION

- Turn on the computer
- Put the enclosed CD in the special drive
- Open the folder related to the CD unit (e.g.: D)
- Double-click on icon “HID_Libra3Setup.exe”
- Follow the instructions provided on the screen

- In case of difficulties, put the installation CD in its drive and look for the files that follow in the root:
- Read the instructions included in file:” Libra_installation_Guide_ENG.pdf” in English language

4.4 PROGRAM RUNNING

Launch the program by double clicking on the “Libra” icon

After a few seconds, the main screen of the program for selecting the operating mode will appear (see next paragraph).

4.5 MAIN SCREEN

The main screen allows selecting the main operating modes of the application software.

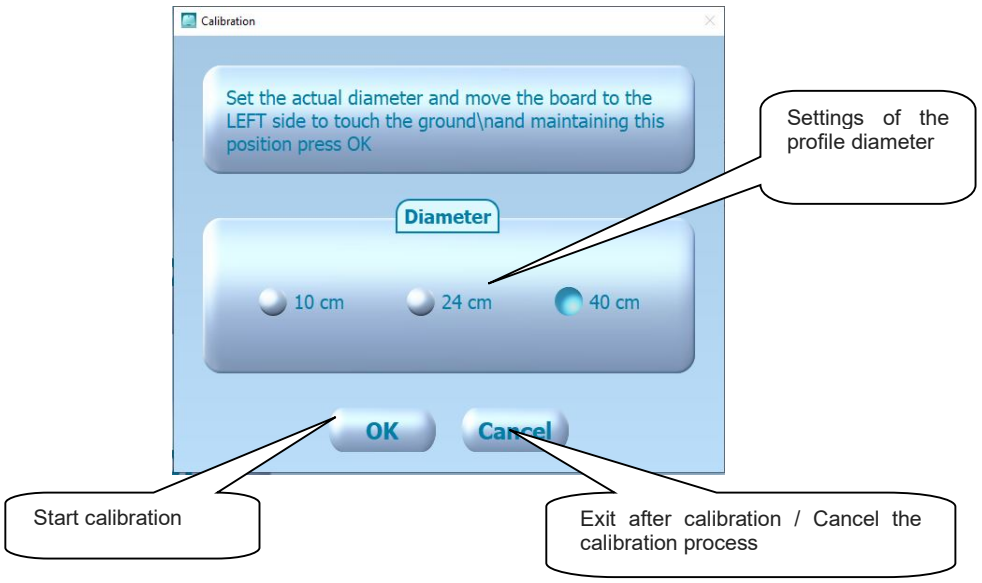
The distinctive feature of this application software is the possibility of choosing among three different types of training:

1. Games: in this mode you will access to a variety of interactive video games and practice having fun
2. Basic Settings: in this mode, you can quickly launch an exercise, setting it up according to a predetermined combination of settings (feedback type, route type, duration of the exercise). If you select this mode, you will work anonymously, and it will not be therefore possible to save the performance in the records, nor to retrieve it in a second moment.
3. Advanced Settings: in this mode, you can perform the exercise and customize it according to all available given parameters. You will sign in the internal database, and you will therefore be able to save all the information about the performance and retrieve it at a later time.

4.6 CALIBRATION

The first operation you must perform is the calibration of the board, for this you must enter the diameter of the balancing shapes and set a reference point for the angle.

From the main screen, press the “Calibration” button; the following screen should appear:


Calibration
Set the actual diameter and move the board to the LEFT side to touch the ground\nand maintaining this position press OK
Diameter
10 cm
24 cm
40 cm
OK
Cancel
Settings of the profile diameter
Start calibration
Exit after calibration / Cancel the calibration process

To start the calibration process, follow the instructions on the screen and confirm with “OK”.

You must perform the calibration of the board every time you start the program and every time you change the balancing shapes.

Find below the steps you should take:

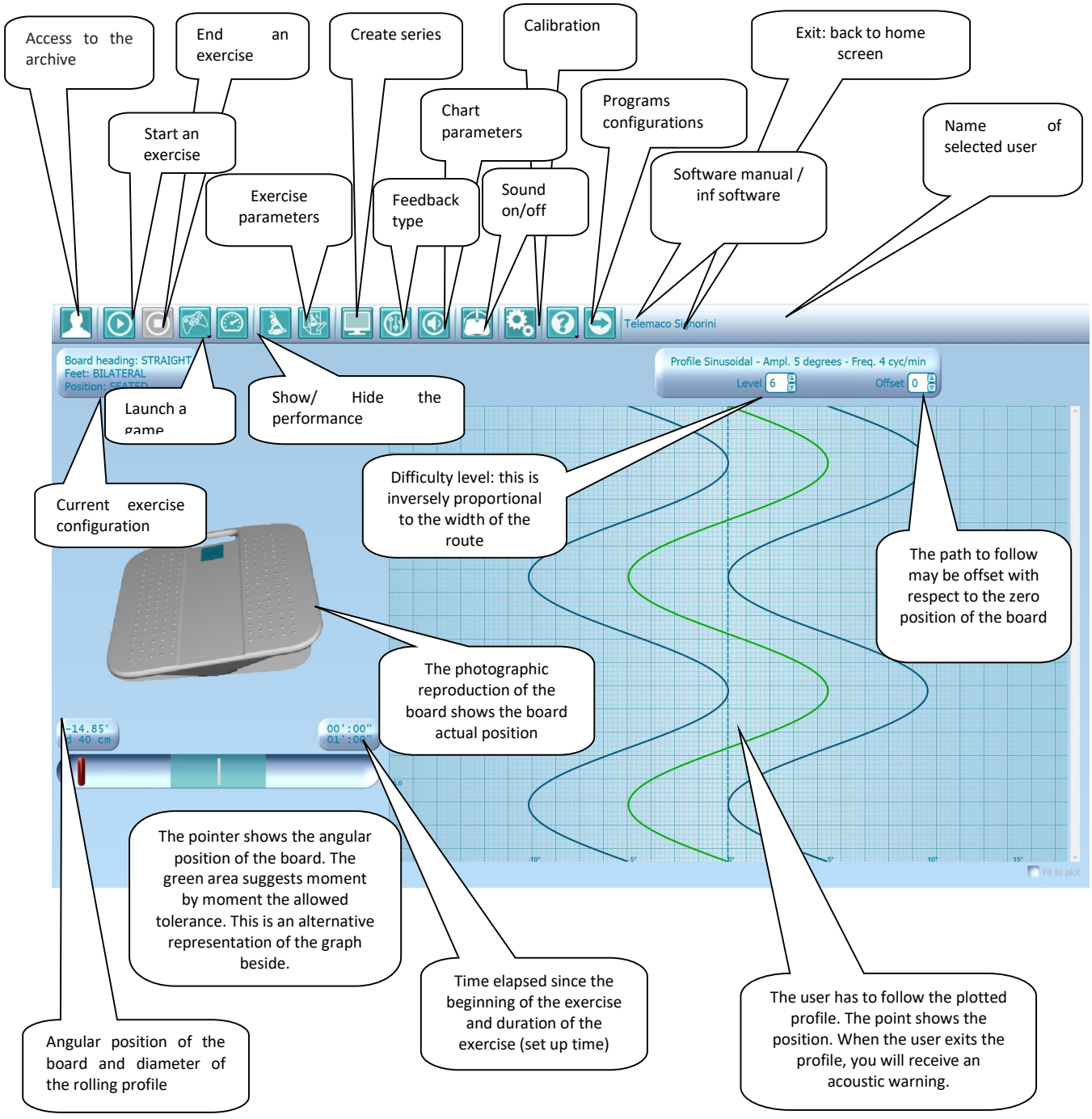
- Ensure that the handle is placed on the opposite side of the patient
- Select the diameter of the rolling profiles that you have entered
- Bring the Libra board onto its extreme left position (the left side of the board should touch the ground)
- Click the button OK.

From this moment on, Libra is ready for use.

Below are the different screens that allow the user to set up and perform the exercises with Libra.

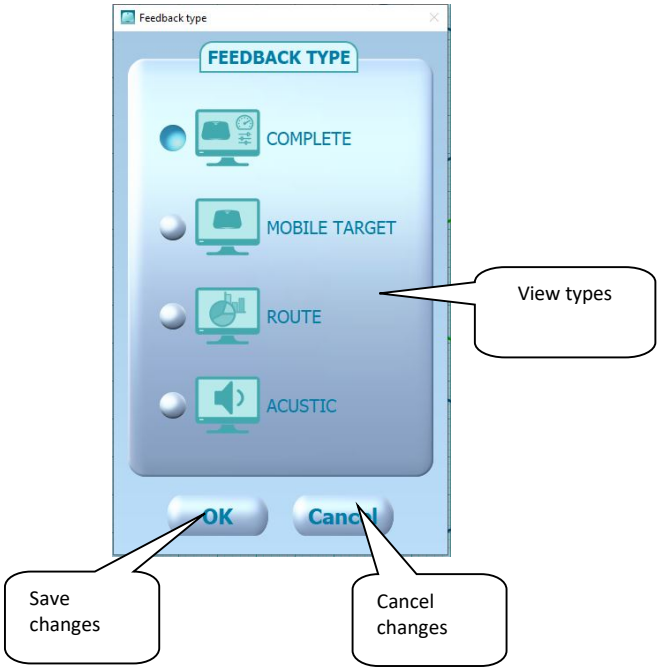
4.7 ADVANCED SETTINGS

The image below shows the screen “advanced settings” and provides a summary of its functionalities. For further details on a specific function, please refer to the following relevant subparagraphs.


Access to the archive
End an exercise
Create series
Calibration
Exit: back to home screen
Start an exercise
Chart parameters
Programs configurations
Name of selected user
Exercise parameters
Feedback type
Sound on/off
Software manual / inf software
Telemaco Signorini
Board heading: STRAIGHT
Feet: BILATERAL
Position: SEATED
Profile Sinusoidal - Ampl. 5 degrees - Freq. 4 cyc/min
Level 6
Offset 0
Launch a game
Show/ Hide the performance
Current exercise configuration
Difficulty level: this is inversely proportional to the width of the route
The path to follow may be offset with respect to the zero position of the board
The photographic reproduction of the board shows the board actual position
-14.85°
d 40 cm
00':00"
01':0
The pointer shows the angular position of the board. The green area suggests moment by moment the allowed tolerance. This is an alternative representation of the graph beside.
Time elapsed since the beginning of the exercise and duration of the exercise (set up time)
The user has to follow the plotted profile. The point shows the position. When the user exits the profile, you will receive an acoustic warning.
Angular position of the board and diameter of the rolling profile

4.7.1 View types

The key opens an overlay window that allows selecting the different modes of viewing and executing the exercise.

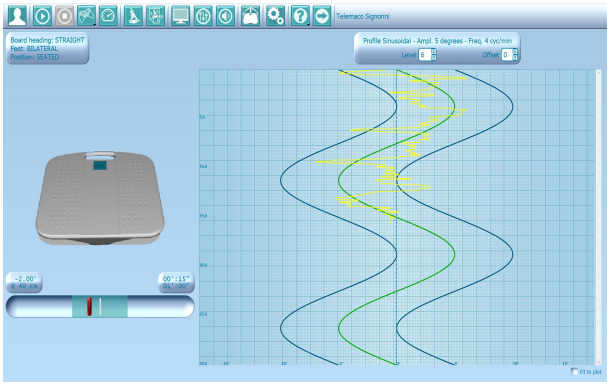


There are namely four different types:

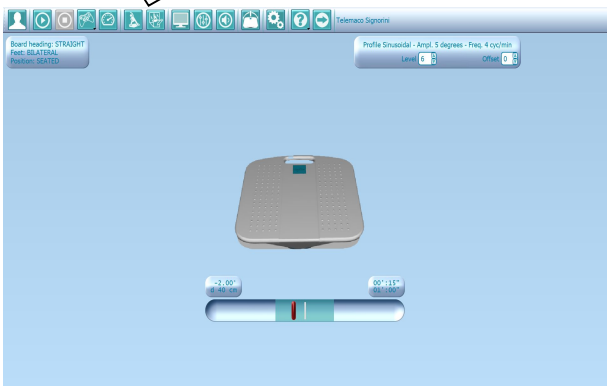
1. **Complete:** you can view both the profile of the movement of the board and the photographic representation of the board itself, with specific information on angles and times.
2. **Mobile Target:** the photographic representation of the board is viewed full screen; hence the graph showing the profile of the movement is not displayed.
3. **Route:** the profile of the movement of the board is viewed full screen; hence the sketched representation is not displayed.
4. **Acoustic:** Both the photographic representation and the profile of the movement are hidden. Only the information on the elapsed time is displayed and acoustic warnings are determined during the exercise.

Find below an example for each specific view type:

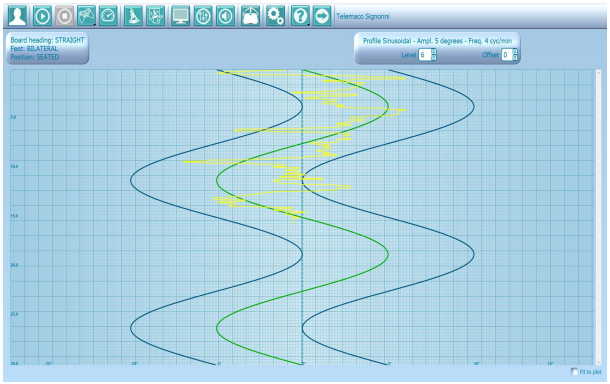
Complete Display:
Animation + route



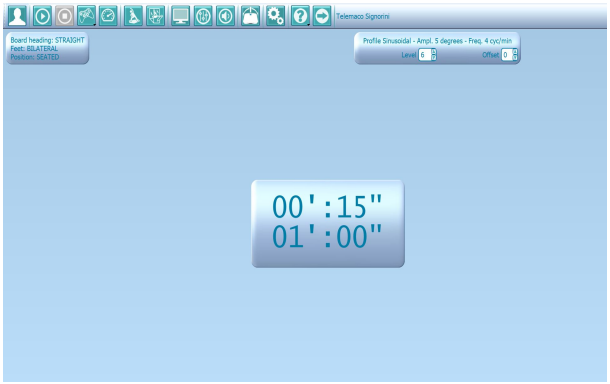
Mobile target (simple display): animation only



Route only Display:
Full screen route

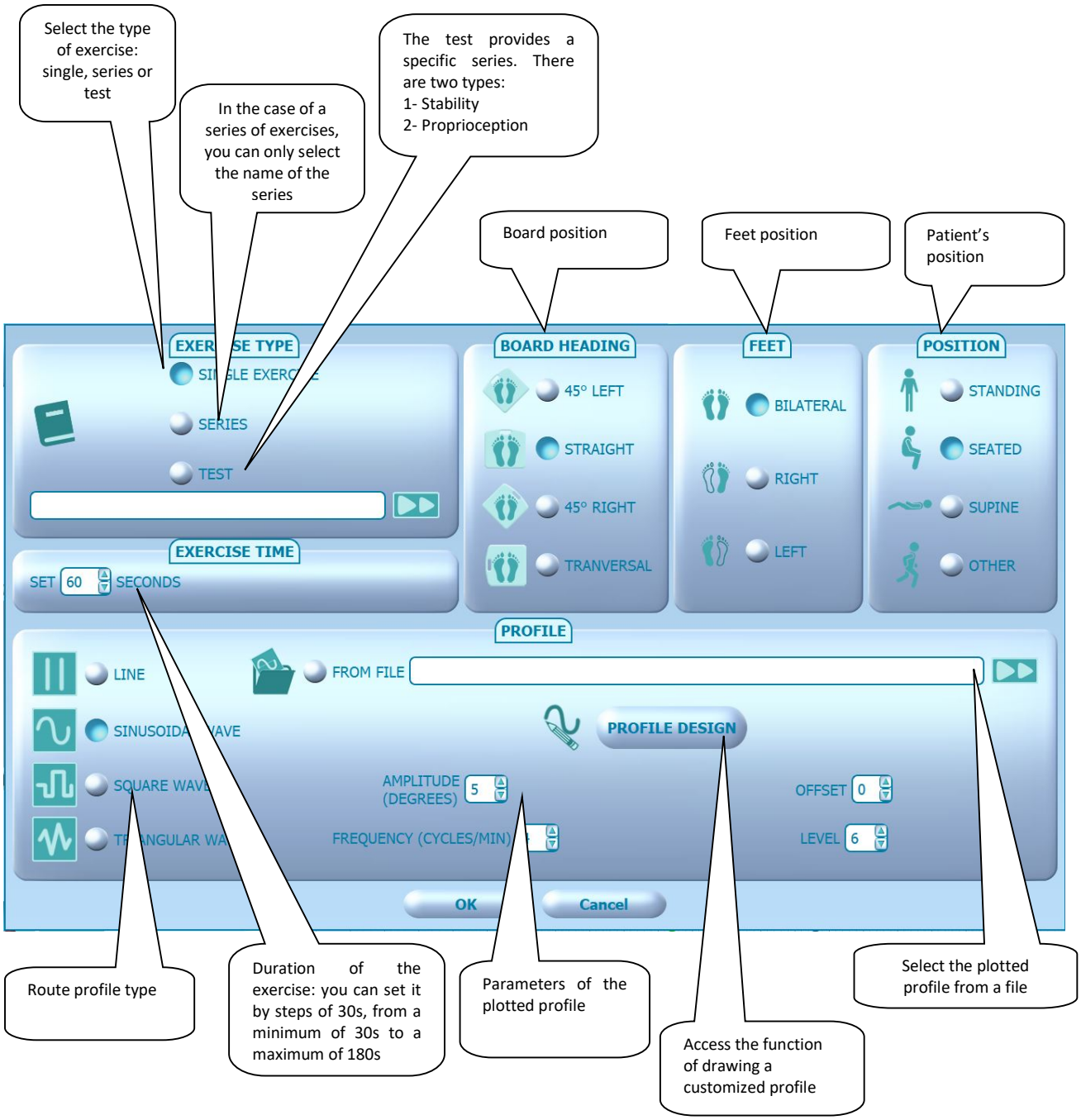


Acoustic/ no feedback display: only acoustic feedback

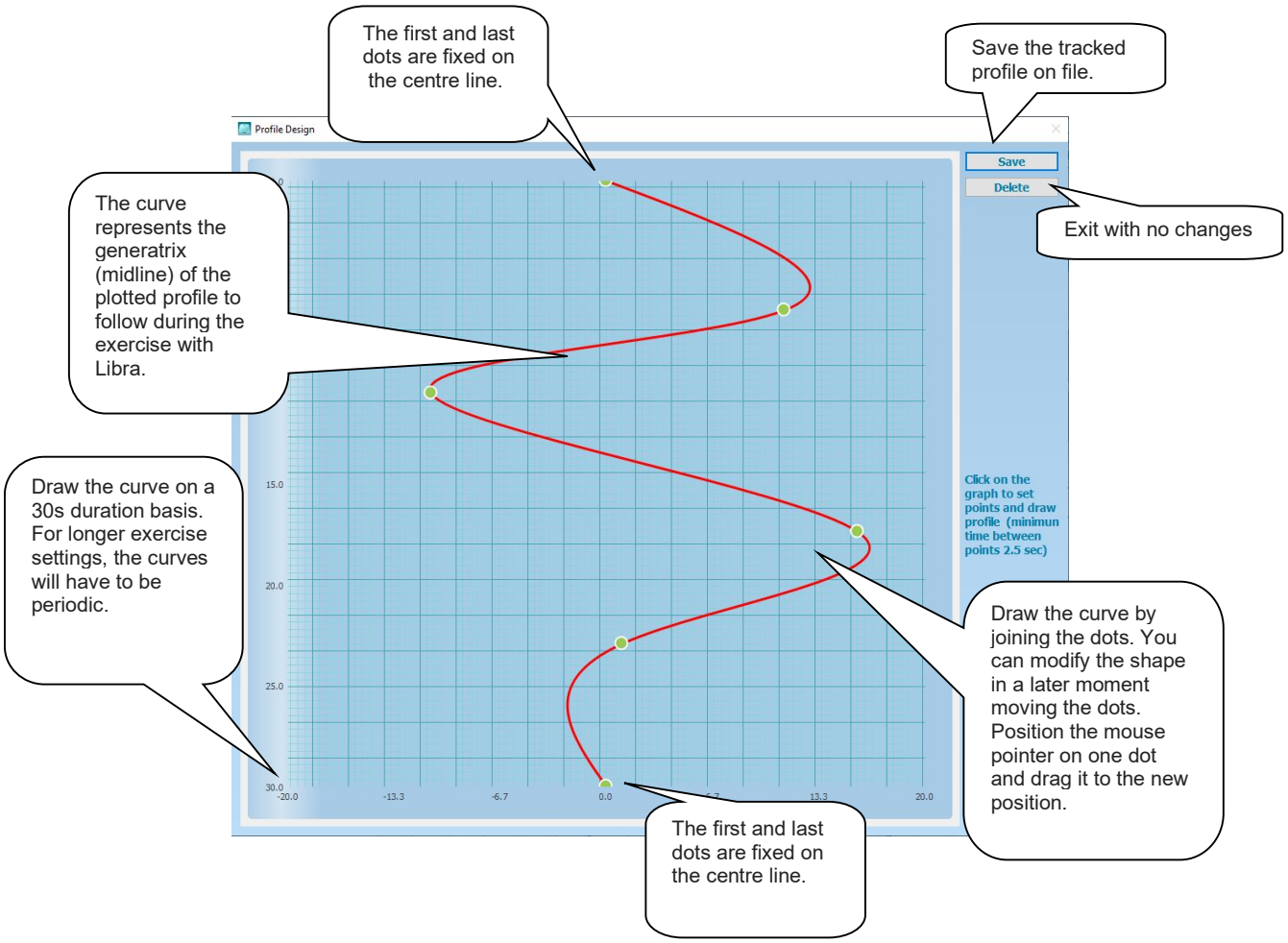


4.7.2 EXERCISE SET UP

The key starts a new exercise. If you have not done it yet, you may set the workout parameters now enabling the relevant window by pushing the key :

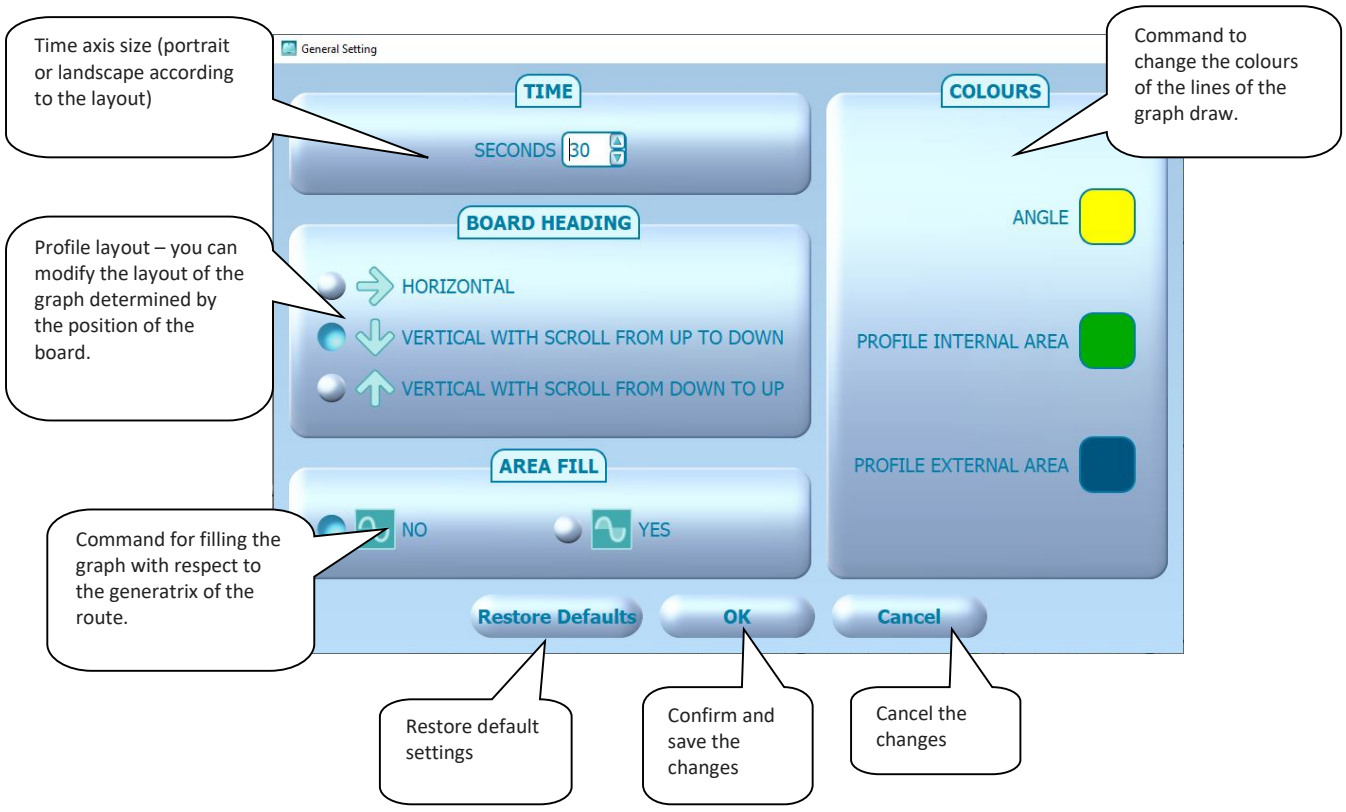


If you press the key “Profile Design”, you will open an overlay window and will be able to draw a personalised profile for the exercise.


The first and last dots are fixed on the centre line.
Save the tracked profile on file.
Profile Design
Save
Delete
Exit with no changes
The curve represents the generatrix (midline) of the plotted profile to follow during the exercise with Libra.
Draw the curve on a 30s duration basis. For longer exercise settings, the curves will have to be periodic.
Click on the graph to set points and draw profile (minimun time between points 2.5 sec)
15.0
20.0
25.0
30.0
-20.0
-13.3
-6.7
0.0
13.3
20.0
Draw the curve by joining the dots. You can modify the shape in a later moment moving the dots. Position the mouse pointer on one dot and drag it to the new position.
The first and last dots are fixed on the centre line.

4.7.3 ROUTE GRID SET-UP

If you press the key (or if you simply click on the graph paper containing the route), you will open the window below and will be able to act on the shape, colours, size and layout of the graphic part of the draw.


Time axis size (portrait or landscape according to the layout)
General Setting
TIME
SECONDS 30
COLOURS
Command to change the colours of the lines of the graph draw.
ANGLE
BOARD HEADING
Profile layout – you can modify the layout of the graph determined by the position of the board.
HORIZONTAL
VERTICAL WITH SCROLL FROM UP TO DOWN
VERTICAL WITH SCROLL FROM DOWN TO UP
PROFILE INTERNAL AREA
PROFILE EXTERNAL AREA
AREA FILL
Command for filling the graph with respect to the generatrix of the route.
NO
YES
Restore Defaults
OK
Cancel
Restore default settings
Confirm and save the changes
Cancel the changes

4.7.4 CALIBRATION

To launch the calibration of the board, if you had not previously executed it from the main screen, simply press the key and follow the procedure described in paragraph. **¡Error! No se encuentra el origen de la referencia.**.

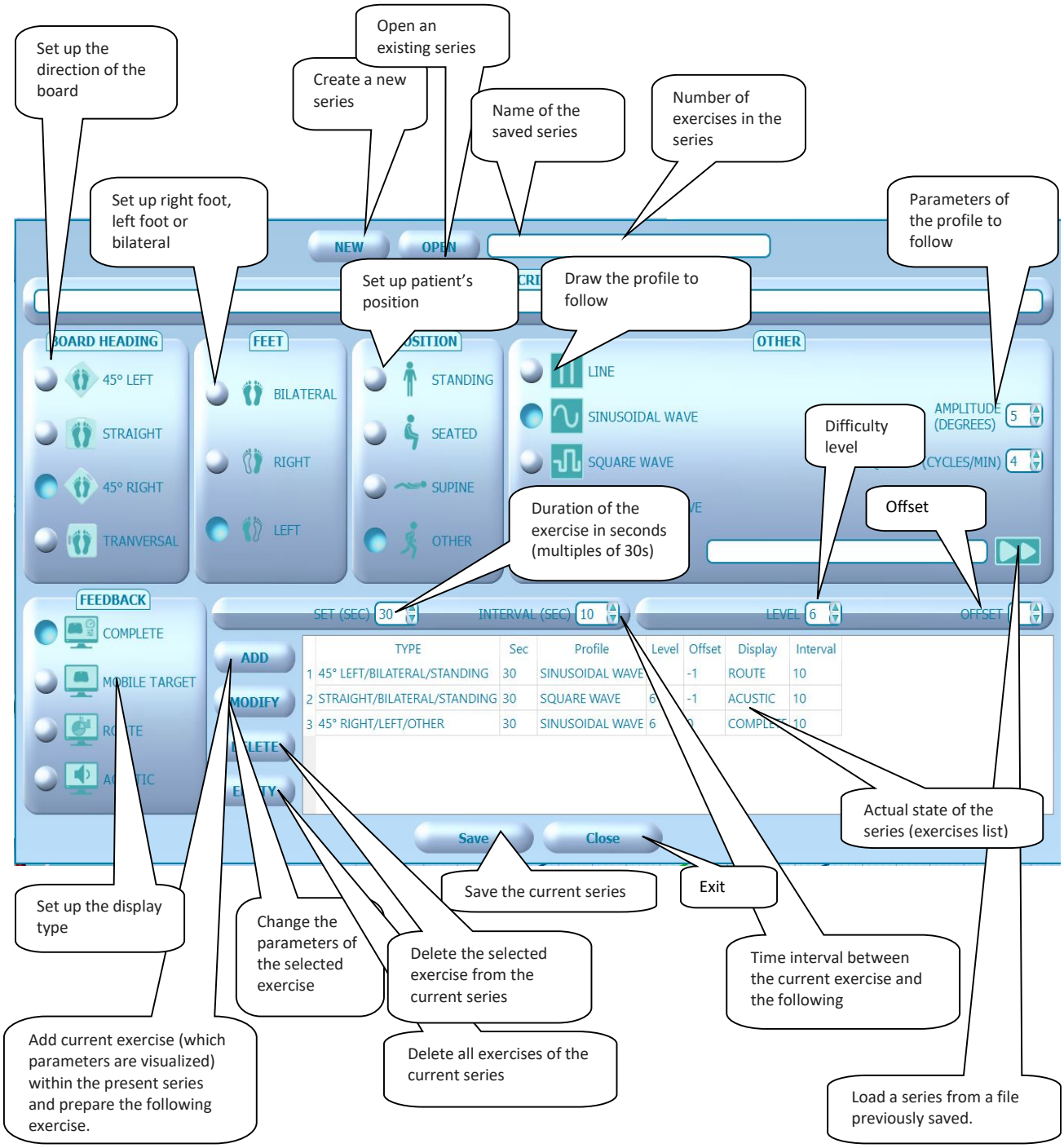
4.7.5 TONES AND SOUNDS

When you press the key you enable/disable the emission of an acoustic feedback of variable frequency during the performance of the exercise.

4.7.6 SERIES OF EXERCISES - WORKOUT PROTOCOLS

The application software allows setting up a set of exercises in a totally customized way and according to the needs of the patient. Each series can count an indefinite number of exercises, and for each single exercise, you can define any combination of parameters.

If you press the key , you activate the creation of the series.
The image below summarizes the function of every interactive element that you will find in the series creation tab.

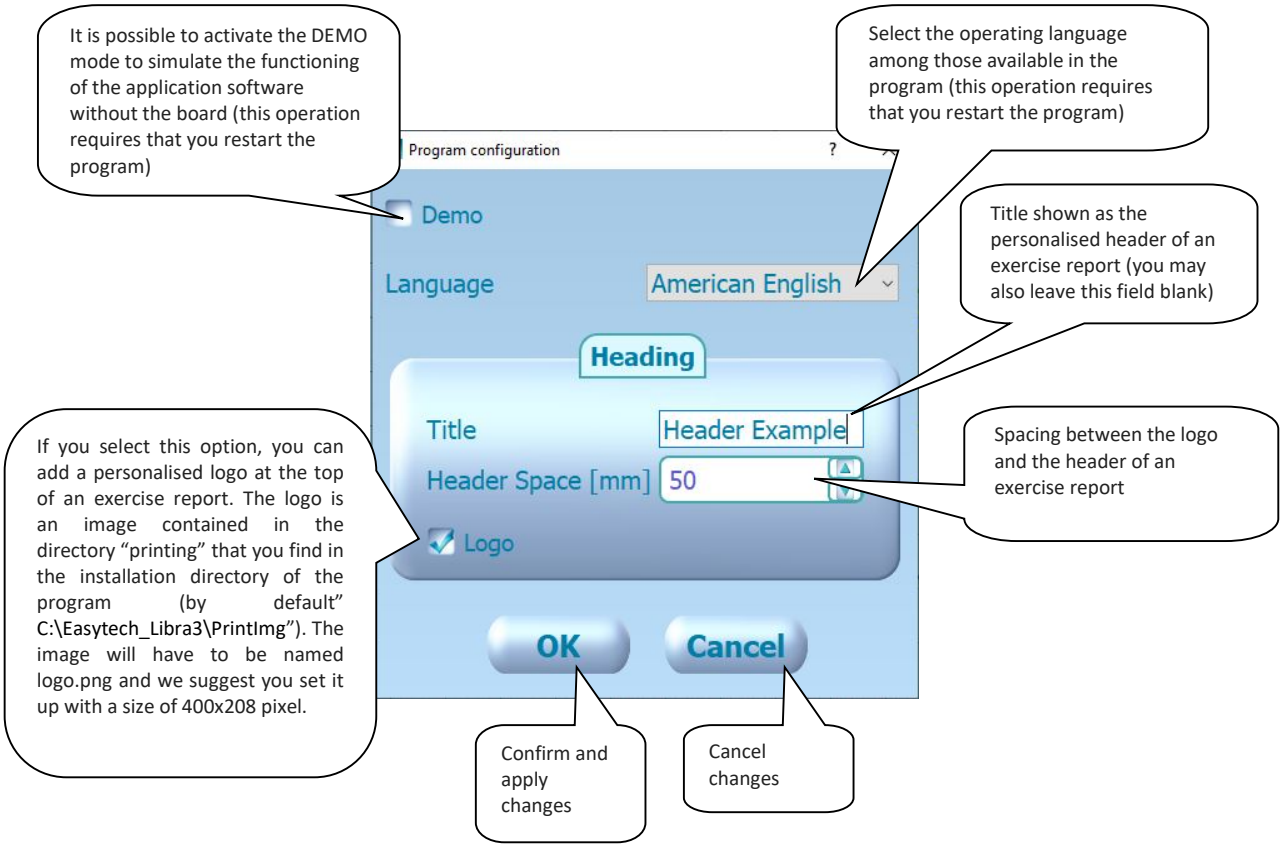


4.7.7 SOFTWARE SETTINGS

The application software is completely configurable. You can carry on the configuration by setting up the parameters in the configuration file "Libra.ini", that you find in the software home directory (the folder in which it is installed).

The access to most of the parameters included in the configuration file is reserved to qualified technical personnel, and it is therefore highly recommended to prevent any intervention by ordinary operators.
A compendious manual with the description of all parameters is in all cases available upon request.

If you press the key you will activate an overlay window that allows setting up the main parameters of the software itself, as you can see from the picture below.

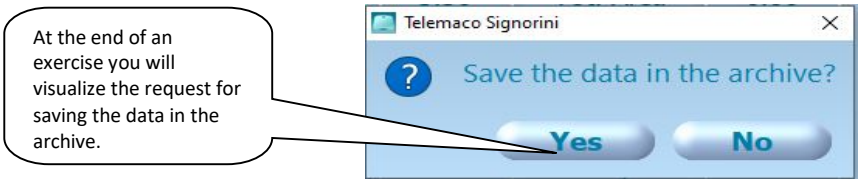

It is possible to activate the DEMO mode to simulate the functioning of the application software without the board (this operation requires that you restart the program)
Select the operating language among those available in the program (this operation requires that you restart the program)
Program configuration
Demo
Language
American English
Heading
Title
Header Example
Header Space [mm]
50
Logo
OK
Cancel
Title shown as the personalised header of an exercise report (you may also leave this field blank)
Spacing between the logo and the header of an exercise report
If you select this option, you can add a personalised logo at the top of an exercise report. The logo is an image contained in the directory "printing" that you find in the installation directory of the program (by default" C:\Easytech_Libra3\PrintImg"). The image will have to be named logo.png and we suggest you set it up with a size of 400x208 pixel.
Confirm and apply changes
Cancel changes

4.7.8 EXECUTION OF THE EXERCISE

Once the exercise has been configured (as illustrated in par. 4.7.2), you can start it by pressing the key . In case you disabled the sound (see par. 4.7.5) you will receive, during the exercise, an acoustic feedback at variable frequency that will be structured as follows:
When the angle of the board coincides with the axis of the error band, that is when the error is null, the frequency of the emitted tone is low (deep sound).
- As the user moves away towards the left or right of the error band axis, the frequency of the tone increases.
- If the stereo sound is on, the emitted tone moves simultaneously from the centre as to follow the direction of the movement.
- If the position of the board exceeds the limit of the error band, you will receive a warning tone (a sharper trill). If the stereo sound is on, this tone will be emitted from the corresponding right or left sound channel.

You can end the exercise before the set up time by pressing the key .

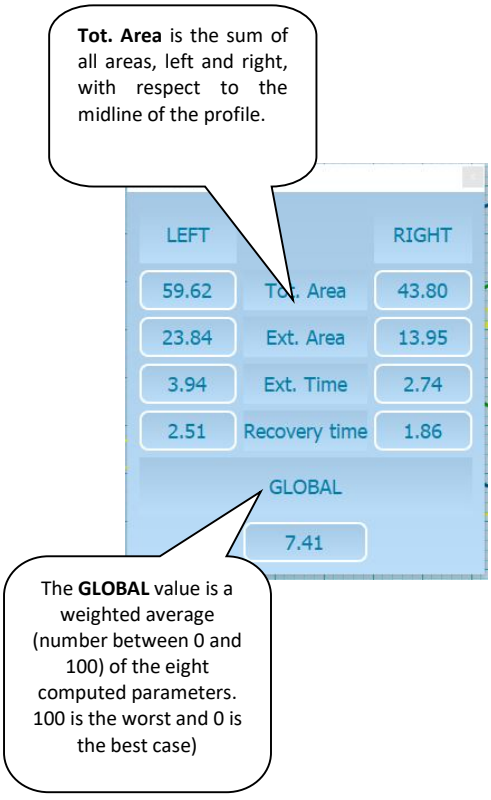
In any case, when an exercise ends, the program always submits the request to store the data and to view the performance dashboard. If you selected a series of exercises from the window of the settings, you will receive the request for storing the data for all the exercises of the series, until the end of the series itself.

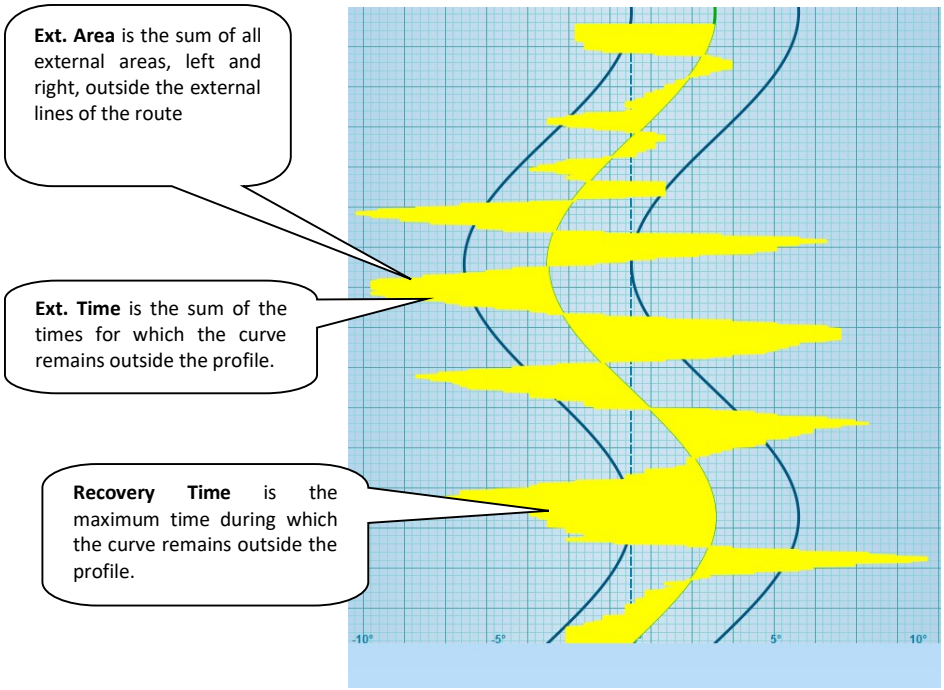

At the end of an exercise you will visualize the request for saving the data in the archive.
Telemaco Signorini
Save the data in the archive?
Yes
No

Once you validated your choice concerning saving your data in the archive, you will still see and overlay window providing the details of the performances of the exercise just ended (see par. 4.7.8.1)

4.7.8.1 RESULTS OF THE EXERCISE

For each exercise, it is possible to visualize an overlay window showing the performance, and namely a series of parameters that allows assessing the quality of the exercise executed. This is an automatic display at the end of the exercise and you can enable or disable it, even from the archive consultation, by pressing the specific key.
The frame "Performance" shows the statistics of area, external area to the route, time, and maximum re-entry time in the route, related to the exercise visualized.




Ext. Area is the sum of all external areas, left and right, outside the external lines of the route
Ext. Time is the sum of the times for which the curve remains outside the profile.
Recovery Time is the maximum time during which the curve remains outside the profile.
-10°
-5°
5°
10°

Should the exercise be part of a **Test**, the above-mentioned window on the performance will display slightly different data.

In the case of the "**Stability Test**", the aforementioned index "Global" takes on the meaning of "**Stability index**" and is evaluated in terms of: **poor, weak, average, good, excellent,** according to the normative data of reference.

In the case of the "**Proprioception Test**", the window will display, besides the standard numerical values, two more parameters:
"**Recovery Ratio**" defined as the percentage ratio between the recovery Time of the reference limb and its contralateral.

"**Proprioception index**", consisting in the evaluation of the "Recovery Ratio" according to the normative data of reference.

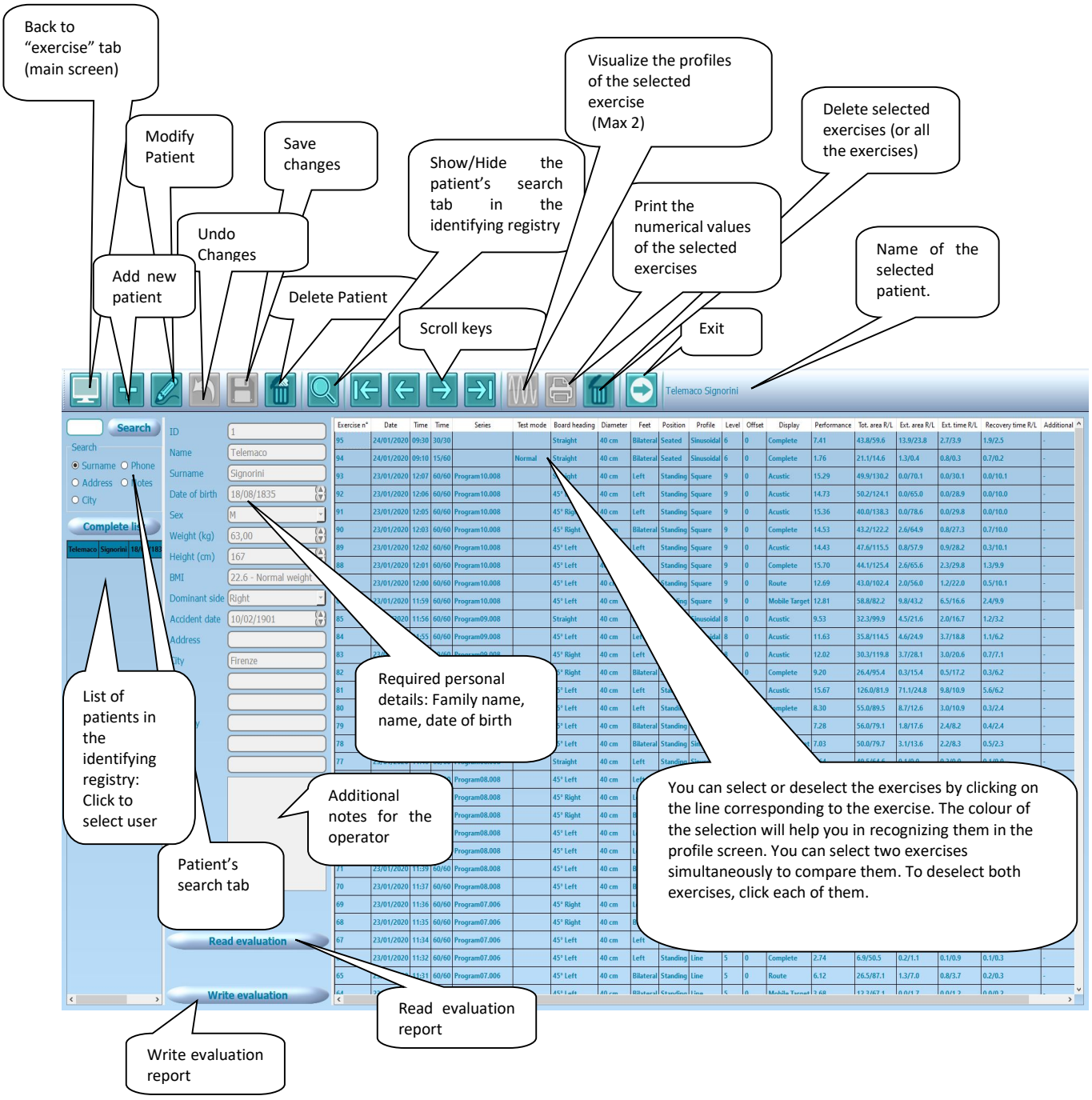
4.7.9 PERFORMANCE

If you press the key , you will show/hide the overlay window with the performances of the last exercise executed. Please refer to par. 4.7.8.1 for further details on the meaning of the several frames.

4.7.10 ARCHIVE

The key enables the menu "Archive" that allows all possible standard actions on the information of the patient included in the archive:

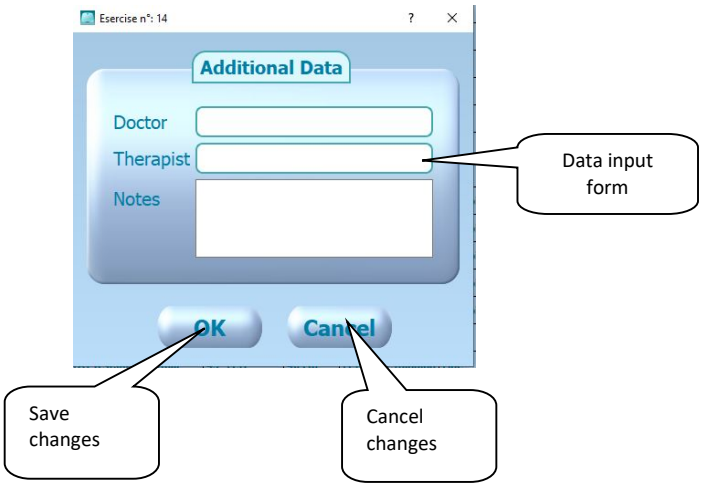
- Search and select
- Amend information
- Insert new names


Back to "exercise" tab (main screen)
Modify Patient
Save changes
Undo Changes
Add new patient
Delete Patient
Show/Hide the patient's search tab in the identifying registry
Visualize the profiles of the selected exercise (Max 2)
Delete selected exercises (or all the exercises)
Print the numerical values of the selected exercises
Scroll keys
Exit
Name of the selected patient.
Telemaco Signorini
List of patients in the identifying registry: Click to select user
Required personal details: Family name, name, date of birth
Additional notes for the operator
Patient's search tab
You can select or deselect the exercises by clicking on the line corresponding to the exercise. The colour of the selection will help you in recognizing them in the profile screen. You can select two exercises simultaneously to compare them. To deselect both exercises, click each of them.
Read evaluation
Write evaluation
Read evaluation report
Write evaluation report

In the section dedicated to the exercises, you may:

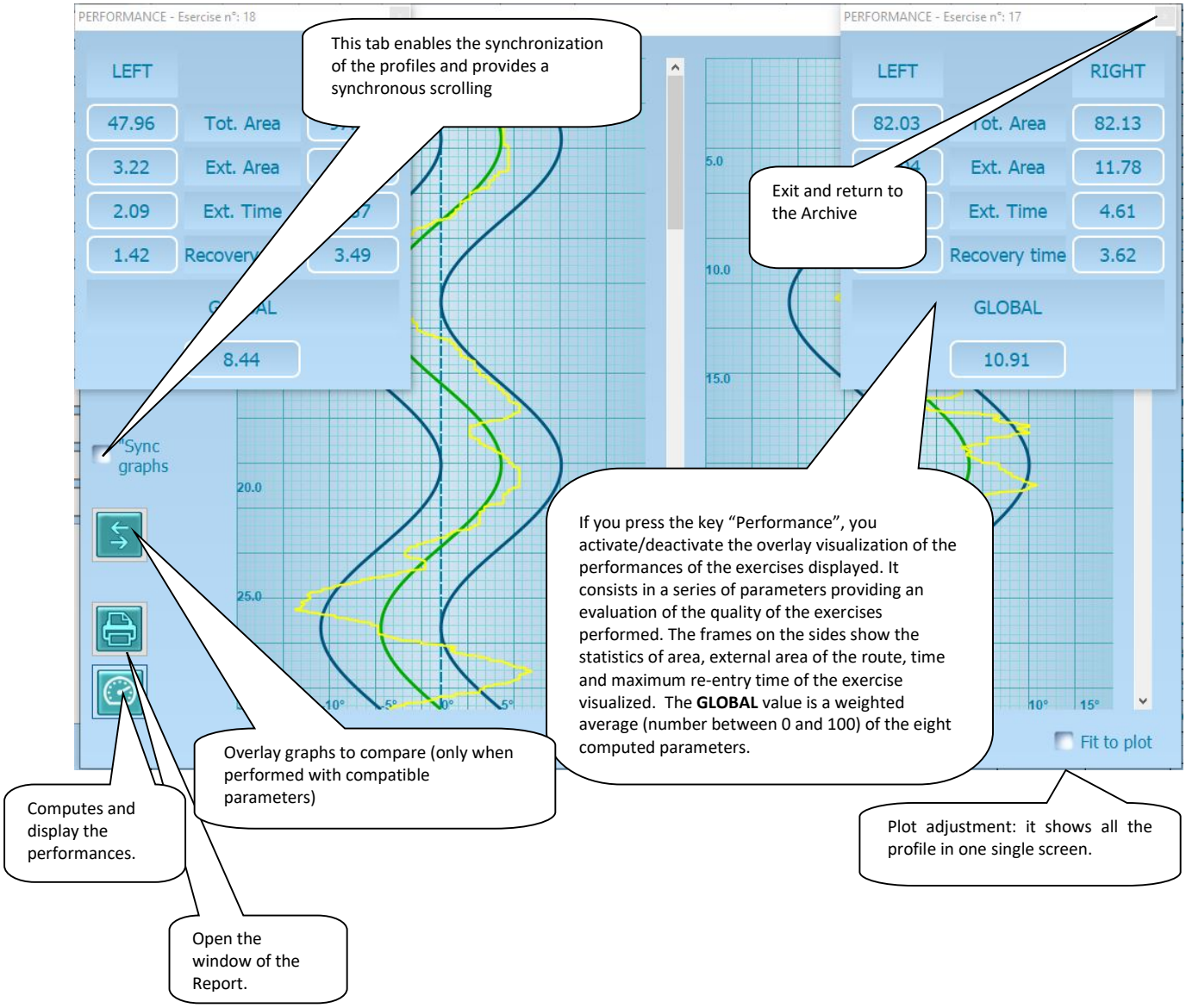
- Check filed exercises
- Select exercises
- Delete exercises
- Add comments (mini-report)

For the latter operation, just select one exercise and click on the cell of the corresponding column called "Additional Data": you will obtain an overlay window looking like the one shown below.



4.7.10.1 VIEW THE EXERCISES AND RESULTS

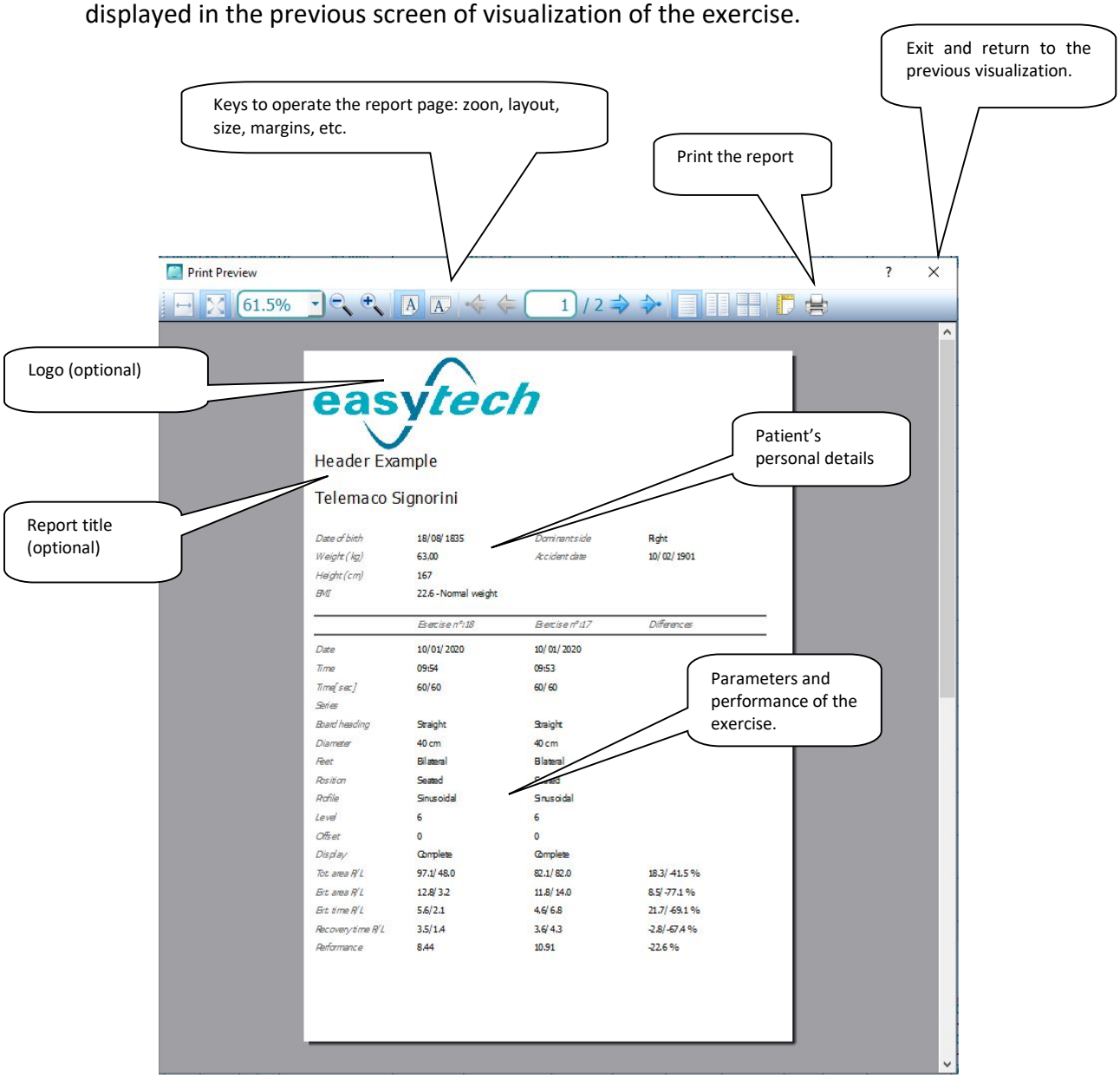
The Key activates the screen "graphs" and allows viewing and printing all data and corresponding graphs of the exercises (max. 2) previously selected from the "archive".

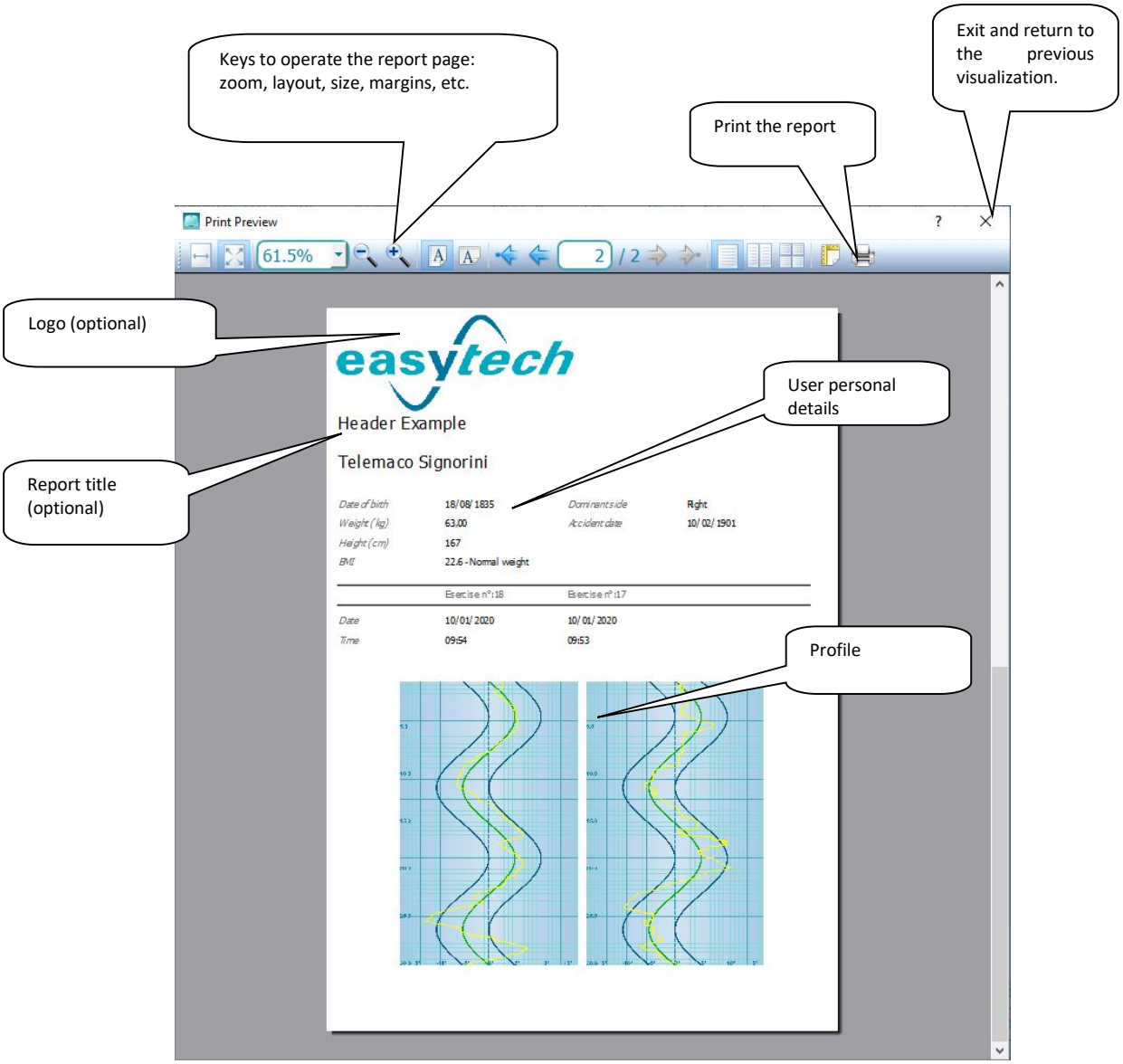

PERFORMANCE - Esercise n°: 18
PERFORMANCE - Esercise n°: 17
LEFT
RIGHT
47.96
Tot. Area
82.03
82.13
3.22
Ext. Area
11.78
2.09
Ext. Time
4.61
1.42
Recovery
3.49
Recovery time
3.62
GLOBAL
8.44
10.91
Sync graphs
Fit to plot
This tab enables the synchronization of the profiles and provides a synchronous scrolling
Exit and return to the Archive
If you press the key "Performance", you activate/deactivate the overlay visualization of the performances of the exercises displayed. It consists in a series of parameters providing an evaluation of the quality of the exercises performed. The frames on the sides show the statistics of area, external area of the route, time and maximum re-entry time of the exercise visualized. The **GLOBAL** value is a weighted average (number between 0 and 100) of the eight computed parameters.
Overlay graphs to compare (only when performed with compatible parameters)
Computes and display the performances.
Plot adjustment: it shows all the profile in one single screen.
Open the window of the Report.

4.7.10.1 REPORT OF AN EXERCISE

The key opens the window of the report of the selected exercise, as shown in the pictures below. The report is made of two pages:

- The first contains the personal details of the patient and all data related to the performance of the exercise (or exercises) selected.
- The second contains, on top of a summary of the personal details of the user, the graph of the exercise (or exercises) selected. The graph in this page will be identical to the one displayed in the previous screen of visualization of the exercise.



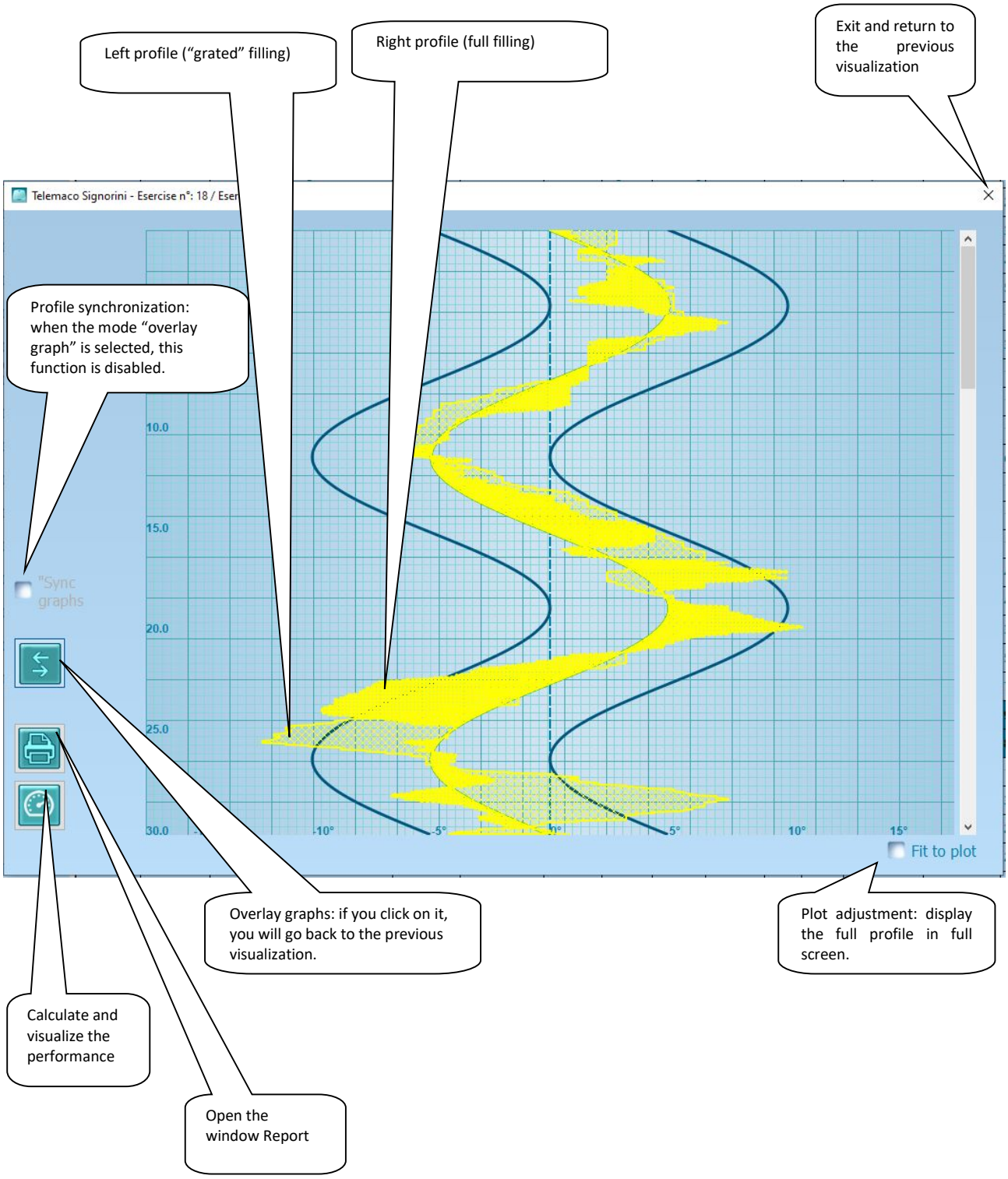


4.7.10.2 OVERLAY AND COMPARISON BETWEEN TWO EXERCISES

The key activates exclusively if two exercises are selected and if there are overlaying criteria.

- Same type of profile
- Same difficulty level

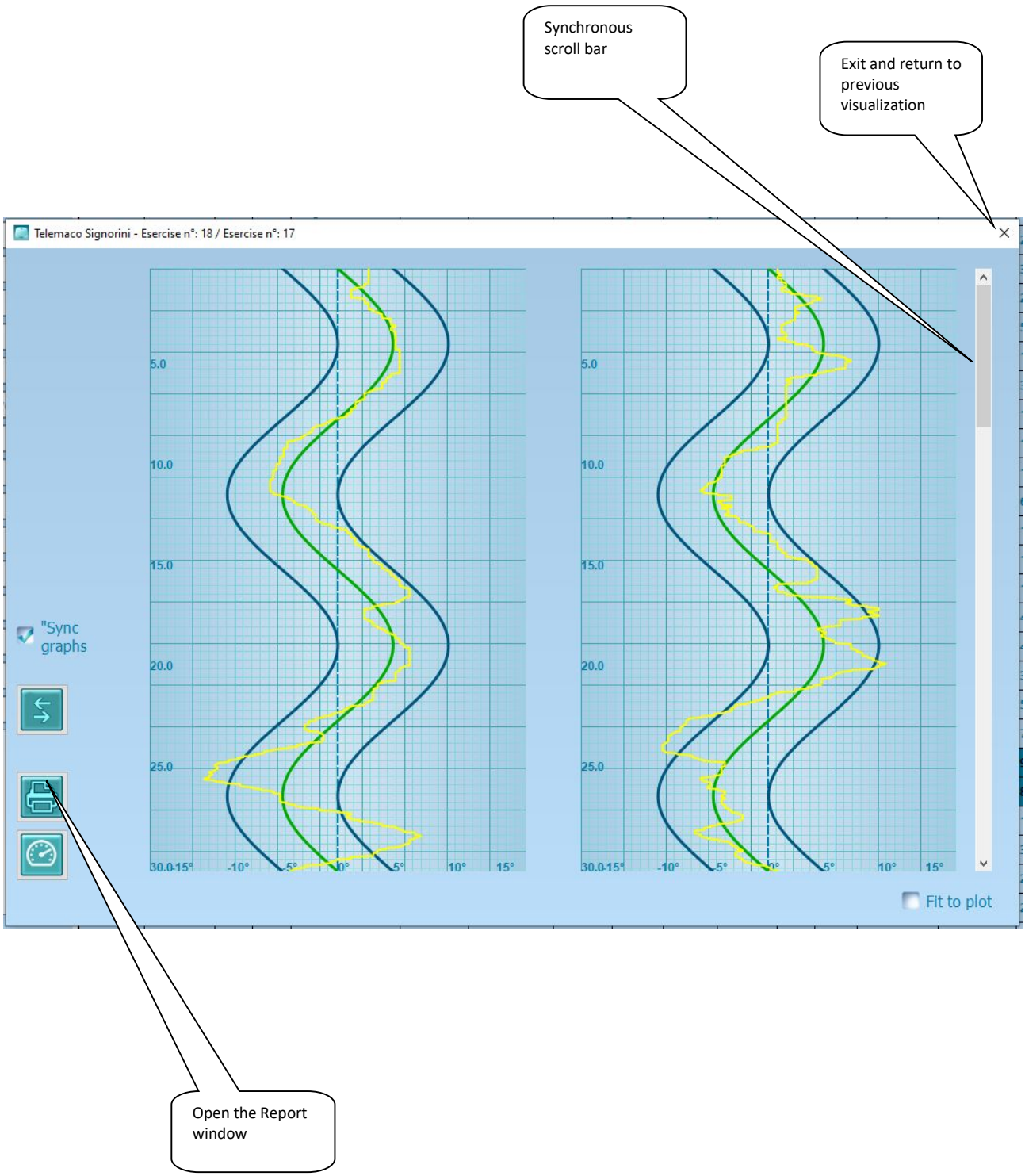
In this case you will obtain one single representation in which the two profiles are overlaid: by default, the left profile will have a “grating” filling, while the right profile will have a full background filling.
You will be able to scroll this new plot exclusively synchronously.


Left profile (“grated” filling)
Right profile (full filling)
Exit and return to the previous visualization
Telemaco Signorini - Esercise n°: 18 / Eser
Profile synchronization: when the mode “overlay graph” is selected, this function is disabled.
"Sync graphs
10.0
15.0
20.0
25.0
30.0
-10°
-5°
5°
10°
15°
Fit to plot
Overlay graphs: if you click on it, you will go back to the previous visualization.
Plot adjustment: display the full profile in full screen.
Calculate and visualize the performance
Open the window Report

4.7.10.3 SYNCHRONOUS COMPARISON OF TWO EXERCISES

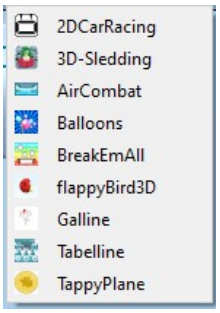
You can put a flag on the box

only if you previously selected two exercises. This function allows scrolling the two graphs synchronously, better highlighting the differences:


Synchronous scroll bar
Exit and return to previous visualization
Telemaco Signorini - Esercise n°: 18 / Esercise n°: 17
"Sync graphs
Fit to plot
Open the Report window

4.7.11 GAMES

If you click on the key you will open a drop-down menu containing the list of all available games in Libra. Please find an example below:

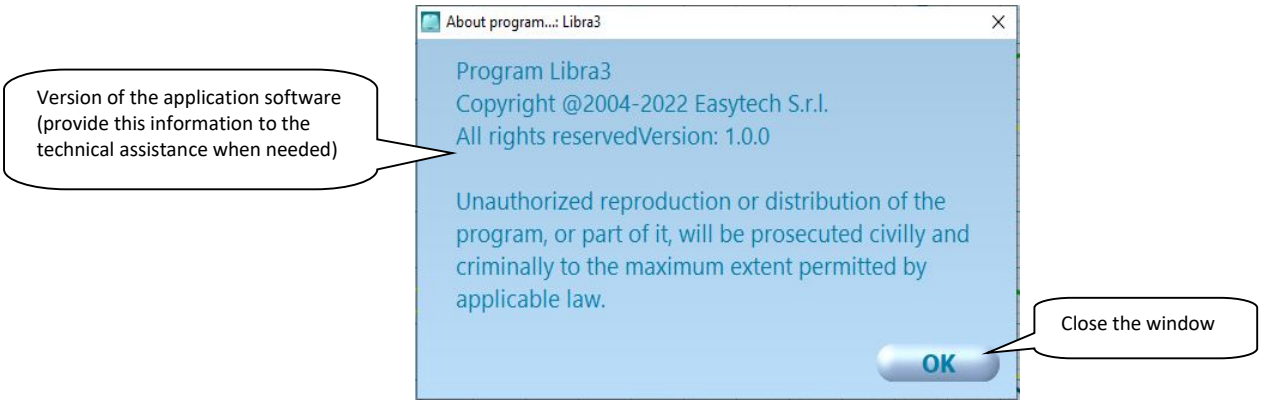


Simply click on one of the games to run it directly in the advanced settings. For any further details on the games, please refer to the specific section.

4.7.12 HELP

The key Help opens a drop-down menu containing two entries:

- Information on the operation software


Version of the application software (provide this information to the technical assistance when needed)
About program...: Libra3
Program Libra3
Copyright @2004-2022 Easytech S.r.l.
All rights reservedVersion: 1.0.0
Unauthorized reproduction or distribution of the program, or part of it, will be prosecuted civilly and criminally to the maximum extent permitted by applicable law.
OK
Close the window

- Online manual

The manual opens through the preset pdf reader of your pc and in the language set in the configuration panel of the operation software (see par. 4.7.7).

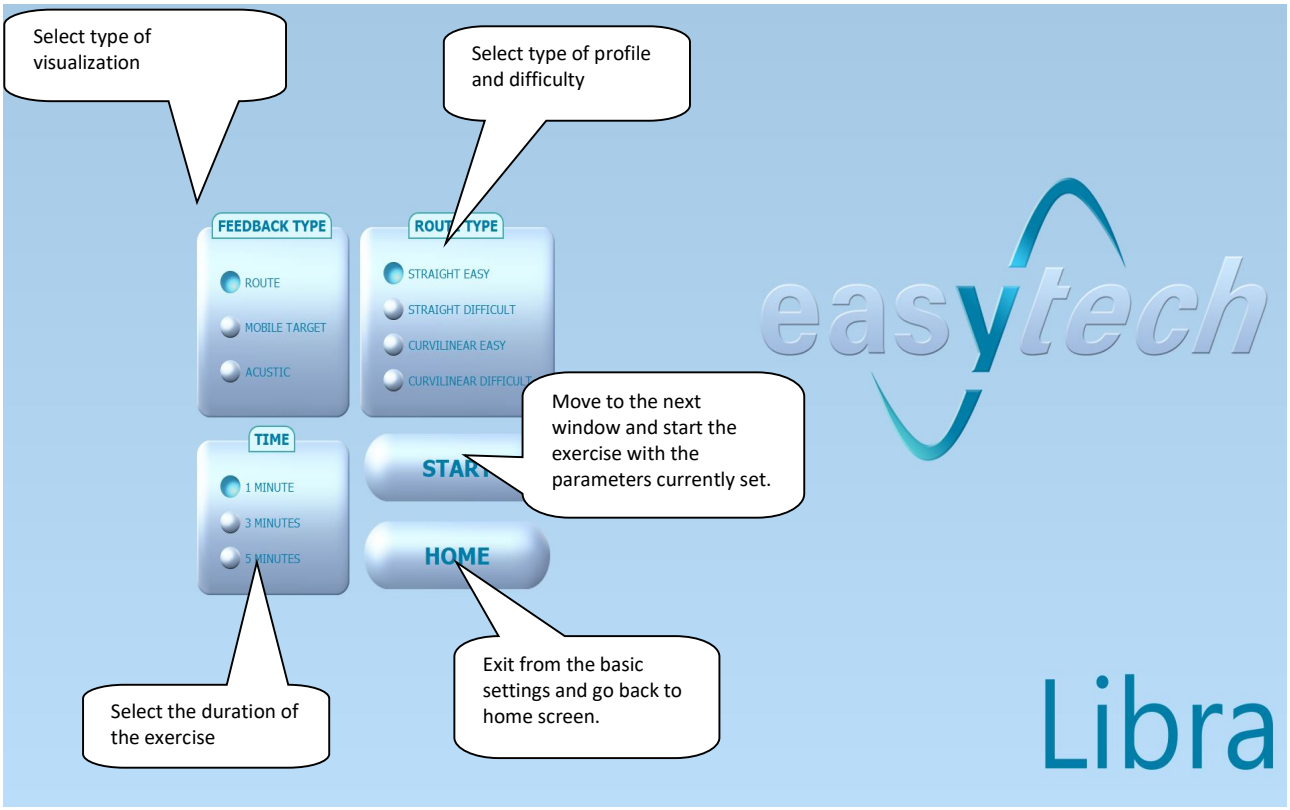
4.7.13 EXIT ADVANCED SETTING.

The key ends the working session.
The function “Exit” shows the closing screen of the Advanced Setting and brings back to the main screen (see par. 4.5).

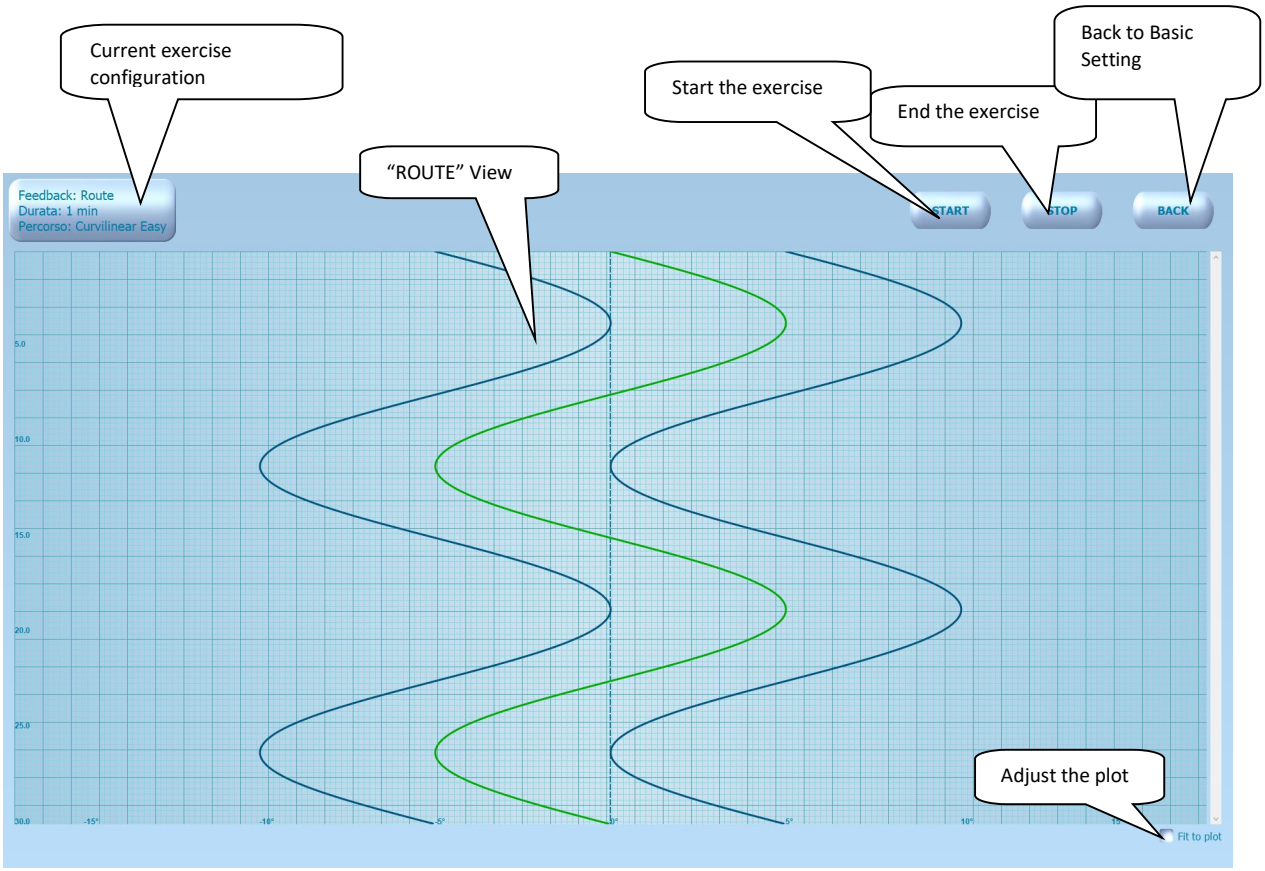
You must ALWAYS use this key to end your working session before turning off your computer, as it shuts down all the archives.

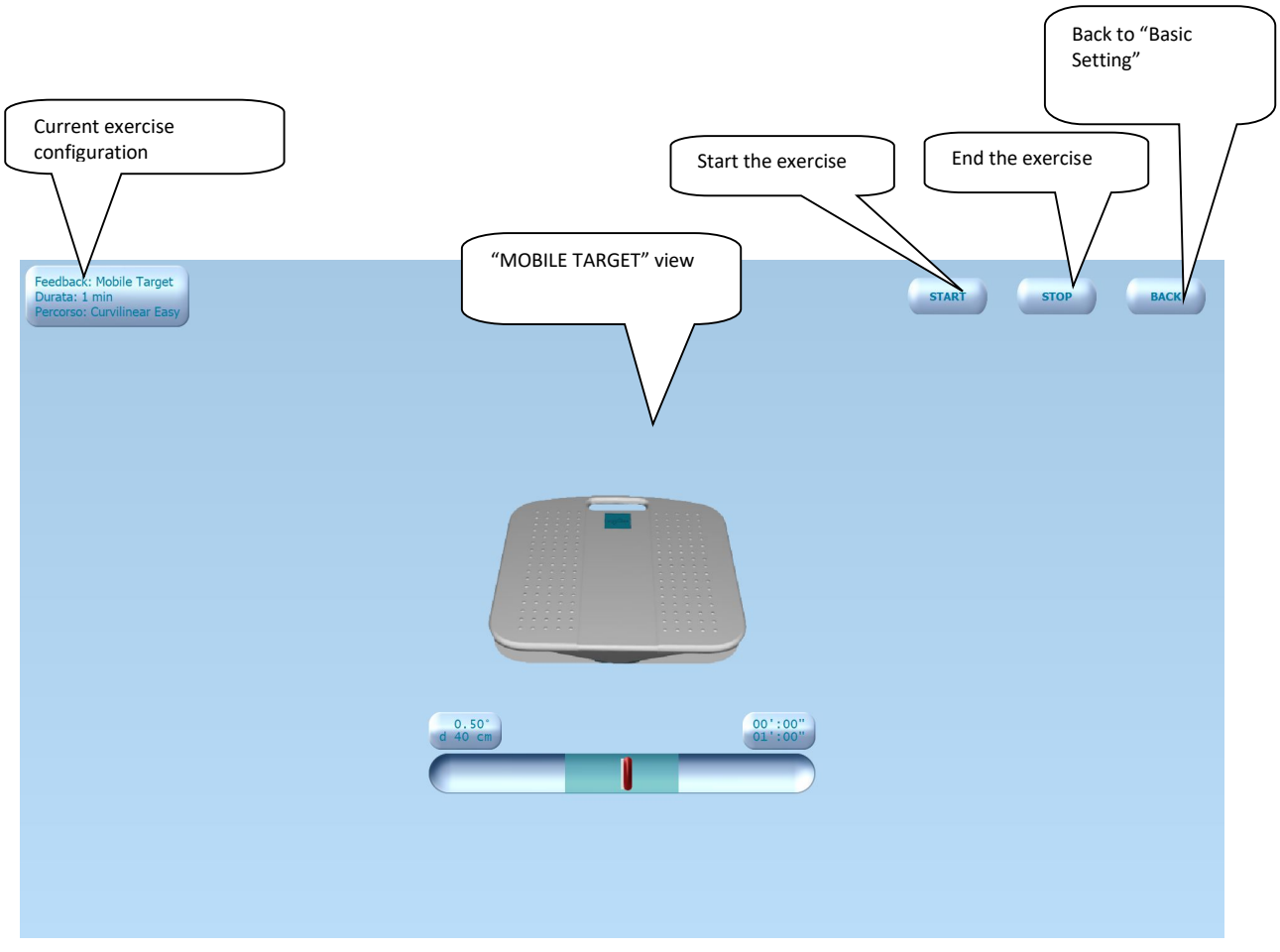
4.8 BASIC SETTING

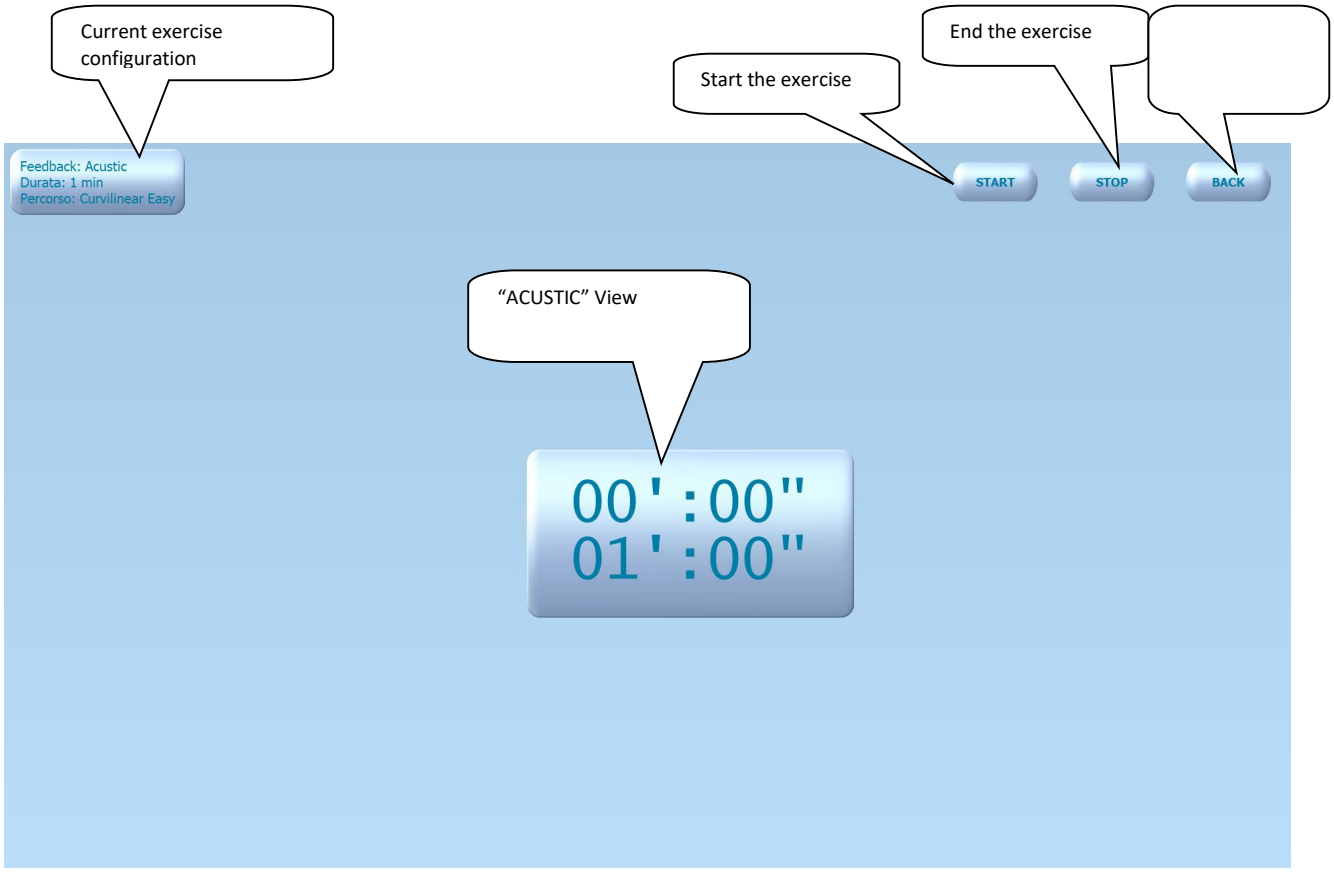
The mode “basic setting” is conceived to perform an exercise right after having configured it, in a simplified and guided way and starting from some tabs containing pre-set values. Therefore, it is not possible to personalise it in a specific and detailed manner, as you would do in the Advanced Setting.
While in this mode, the user will work anonymously, meaning that there is no interaction with the archive and the identifying registry, hence you cannot select any user, nor save in the archive the exercises completed.
The picture below shows the screen “Basic Setting” with a summary of the available functions.



Once you click on the key “START”, you will enter the workout screen where you can perform the exercise. Depending on the selected type of visualization, you will obtain the following possible displays:


Current exercise configuration
Start the exercise
End the exercise
Back to Basic Setting
"ROUTE" View
Feedback: Route
Durata: 1 min
Percorso: Curvilinear Easy
START
STOP
BACK
Adjust the plot
Fit to plot


Back to "Basic Setting"
Current exercise configuration
Start the exercise
End the exercise
"MOBILE TARGET" view
Feedback: Mobile Target
Durata: 1 min
Percorso: Curvilinear Easy
START
STOP
BACK
0.50°
d 40 cm
00':00"
01':00"

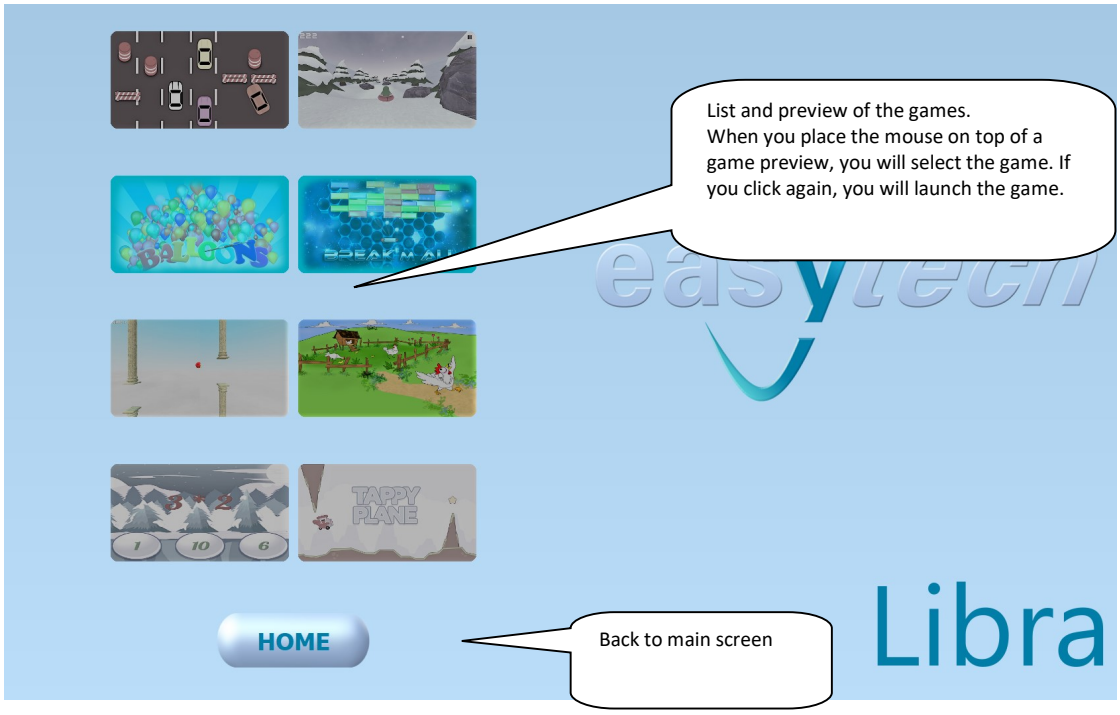

Current exercise configuration
Start the exercise
End the exercise
Feedback: Acustic
Durata: 1 min
Percorso: Curvilinear Easy
START
STOP
BACK
"ACUSTIC" View
00':00"
01':00"

4.9 VIDEOGAMES

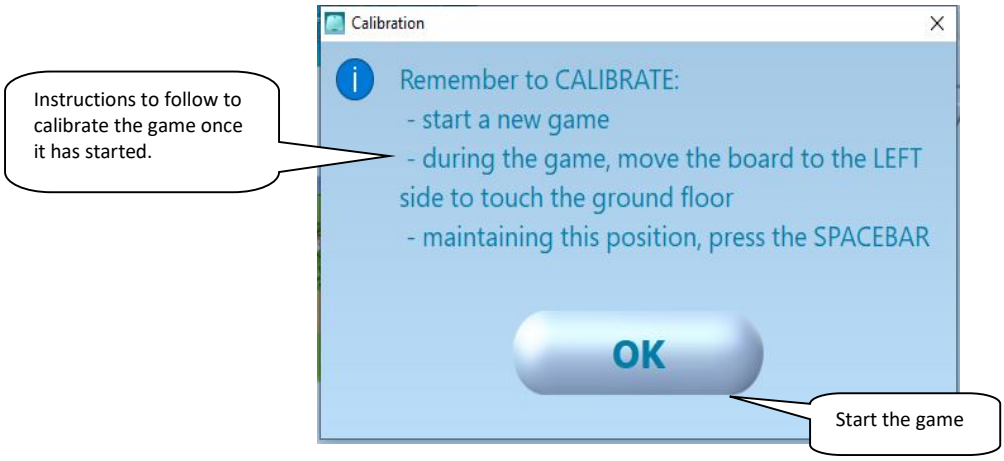
The “GAMES” mode was brought for to allow performing an exercise differently than usual, that is in a more entertaining and stimulating way for the user.
The games integrated in this section of the software belong to the so-called category “side scrolling games”, which includes those games where the player can only move in one direction: in our case, the direction will have to be either vertical or horizontal, depending on the selected game. The player will have to stand on one specific point, with respect to the maximum range of movement, proportional to the tilt angle of the proprioceptive board.

It is possible to play the games even without using Libra. In this case, you just need to launch the game and use the left and right arrow keys, or the mouse, to control your position.
The key “ESC” stops the game and exits immediately, bringing back to the games menu.

The picture below shows the “GAMES” menu and provides a brief description of the functions included.


List and preview of the games.
When you place the mouse on top of a game preview, you will select the game. If you click again, you will launch the game.
HOME
Back to main screen
Libra

Once you start a game, you will obtain a window (like the one shown below), that reminds the user to calibrate. Simply follow the instructions provided on the screen to ensure the game runs properly.


Instructions to follow to calibrate the game once it has started.
Calibration
Remember to CALIBRATE:
- start a new game
- during the game, move the board to the LEFT side to touch the ground floor
- maintaining this position, press the SPACEBAR
OK
Start the game

PLEASE NOTE: if you calibrated the game before launching it, then no further operation is necessary. However, it is possible that you will be required to calibrate again once the game has started.

The operations to carry out, as indicated in the previous screen, are the following:

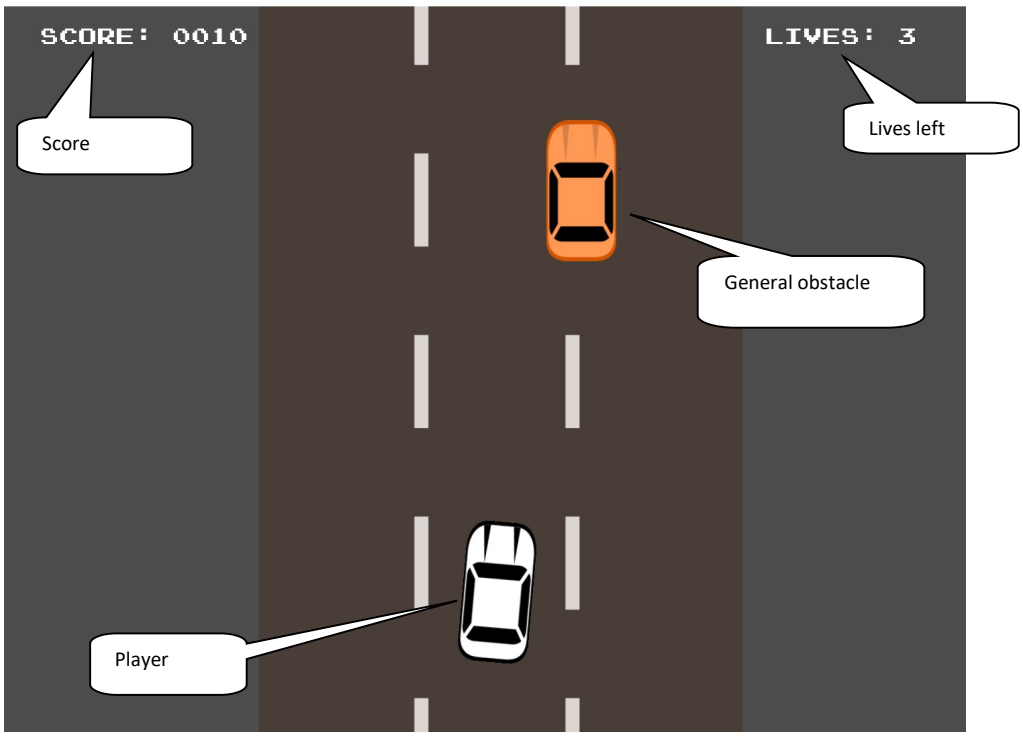
- **You launch the game and start a new match**
- **If you notice an improper control while playing, bring the proprioceptive board to its extreme left position (the left edge needs to touch the ground) and press the space bar.**
- **Start a new match or exit the game and launch it again.**

4.9.1. CAR RACING

When you initialize the game, you will immediately start playing. If the proprioceptive board is connected to the pc you can use it as controller, otherwise you can use the keyboard (left arrow, right arrow).

The goal of the game is to drive the white car avoiding all obstacles breaking forth on the roadway. Every time you overcome an obstacle, the total score increases. You can hit maximum three targets, thereafter the game is over. You can stop the match ahead of time by clicking “ESC”.

At the end of the match no score will be recorded, and you will need to exit the game and restart it if you want to play again.



4.9.2. 3D SLEDDING

Once you launch the game, you will obtain the following screen.

After you press the key “PLAY”, you can use your proprioceptive board as controller, if it is connected to the pc, otherwise you can use the keyboard (left arrow, right arrow).

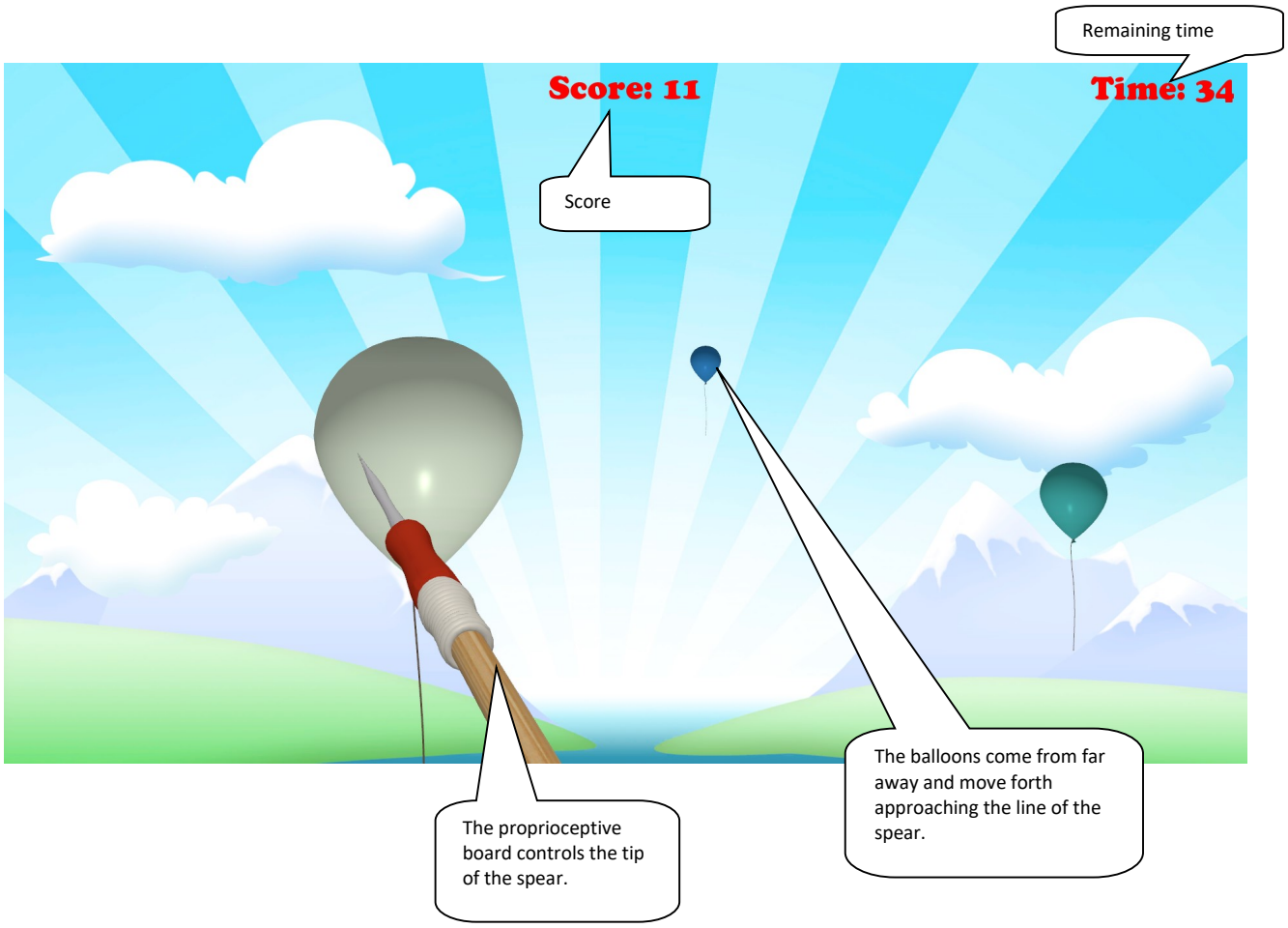
The goal of the game is leading the penguin in a path covered with snow, avoiding all the obstacles that you will encounter. Every time you overcome an obstacle, the total score increases. You can hit maximum three targets, thereafter the game is over. You can stop the match ahead of time by clicking “ESC”.

At the end of the match, your score will be recorded and saved in case it will be higher than the previous one. You may thereafter exit the game or restart it in case you wish to play again.

4.9.3. BALLOONS

When you initialize the game, you will immediately start playing. If the proprioceptive board is connected to the pc you can use it as controller, otherwise you can use the keyboard (left arrow, right arrow).

The goal of the game is to move the tip of the spear to touch the balloons coming forth and pop them. Every popped balloon increases your score; vice versa, every time you miss a balloon, the total score decreases. The game is set to last one minute, and the player needs to pop as many balloons as possible within this time. When time is up, the score will be displayed: exit the game and restart it to play another match.
You can stop the game ahead of time by clicking “ESC”.

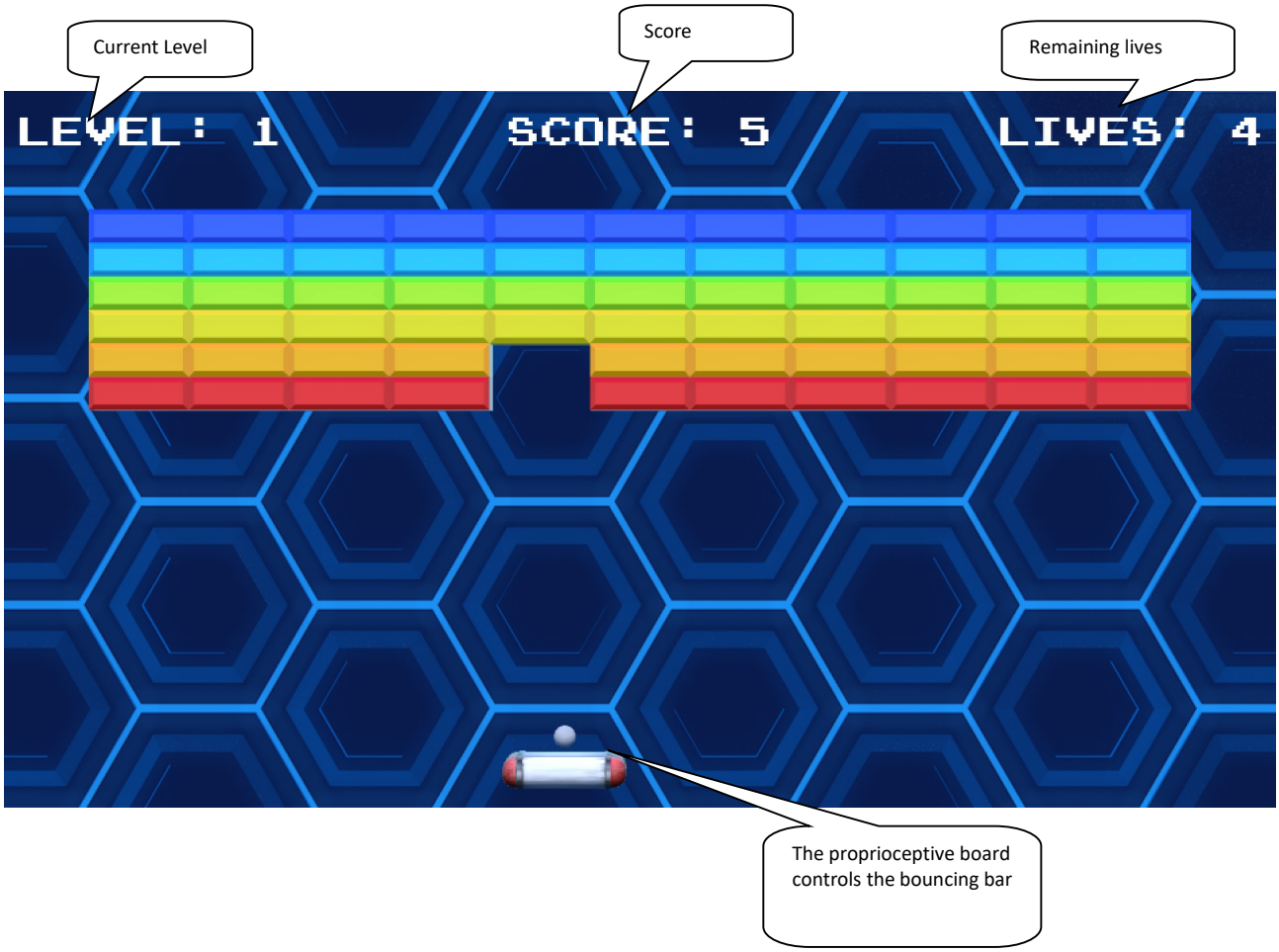

Remaining time
Score: 11
Time: 34
Score
The balloons come from far away and move forth approaching the line of the spear.
The proprioceptive board controls the tip of the spear.

4.9.4. ARKANOID

When you initialize the game, you will immediately start playing. If the proprioceptive board is connected to the pc you can use it as controller, otherwise you can use the keyboard (left arrow, right arrow).

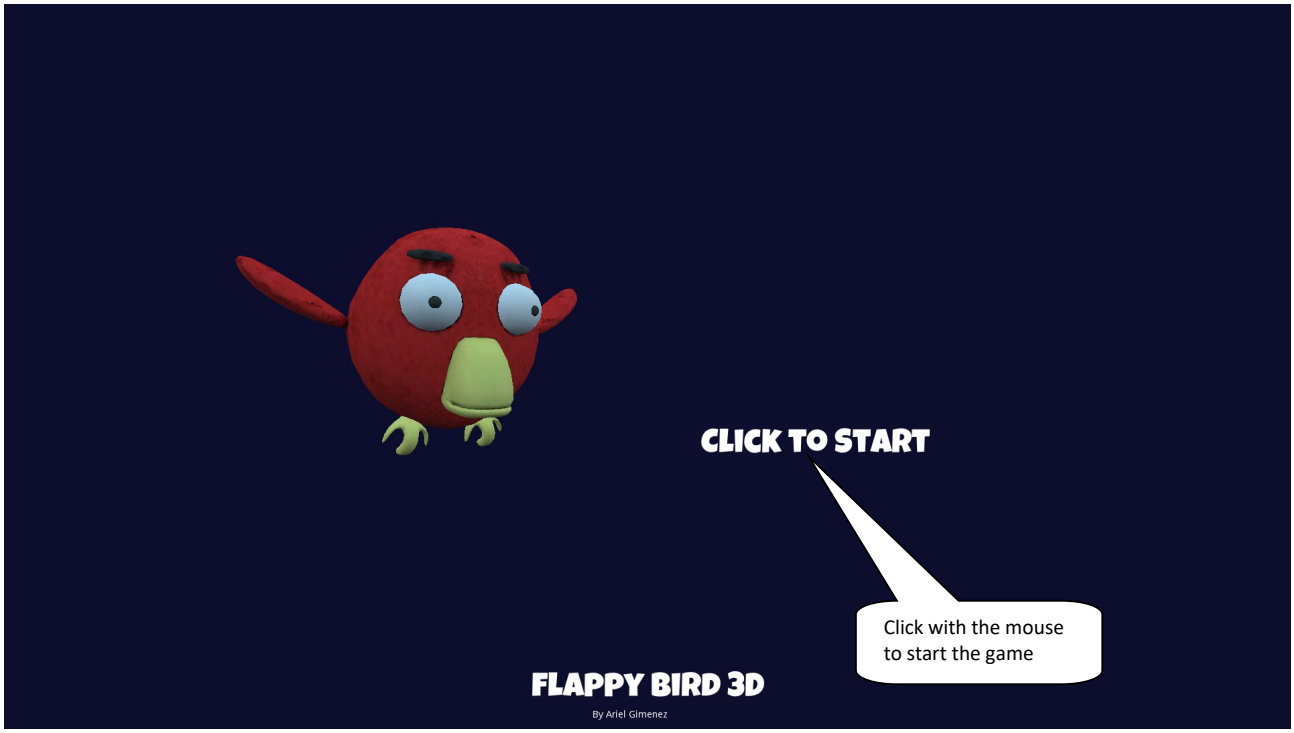
At the beginning of each level, a ball drops to the bottom of the screen and a new one generates. This ball will stay on the racket for a few seconds, after which it will bounce again. The goal of the game is to break the highest number of bricks, receiving the possible bonuses that might hide in them. Every time you break a brick, your score increases. The player can fail four times maximum, after which the game is over. You can stop the match ahead of time by clicking “ESC”.

At the end of the match, the final score will be displayed but it will not be saved. If you want to play again, you will have to exit the game and launch a new match.


Current Level
Score
Remaining lives
LEVEL: 1
SCORE: 5
LIVES: 4
The proprioceptive board controls the bouncing bar

4.9.5. FLAPPY BIRD

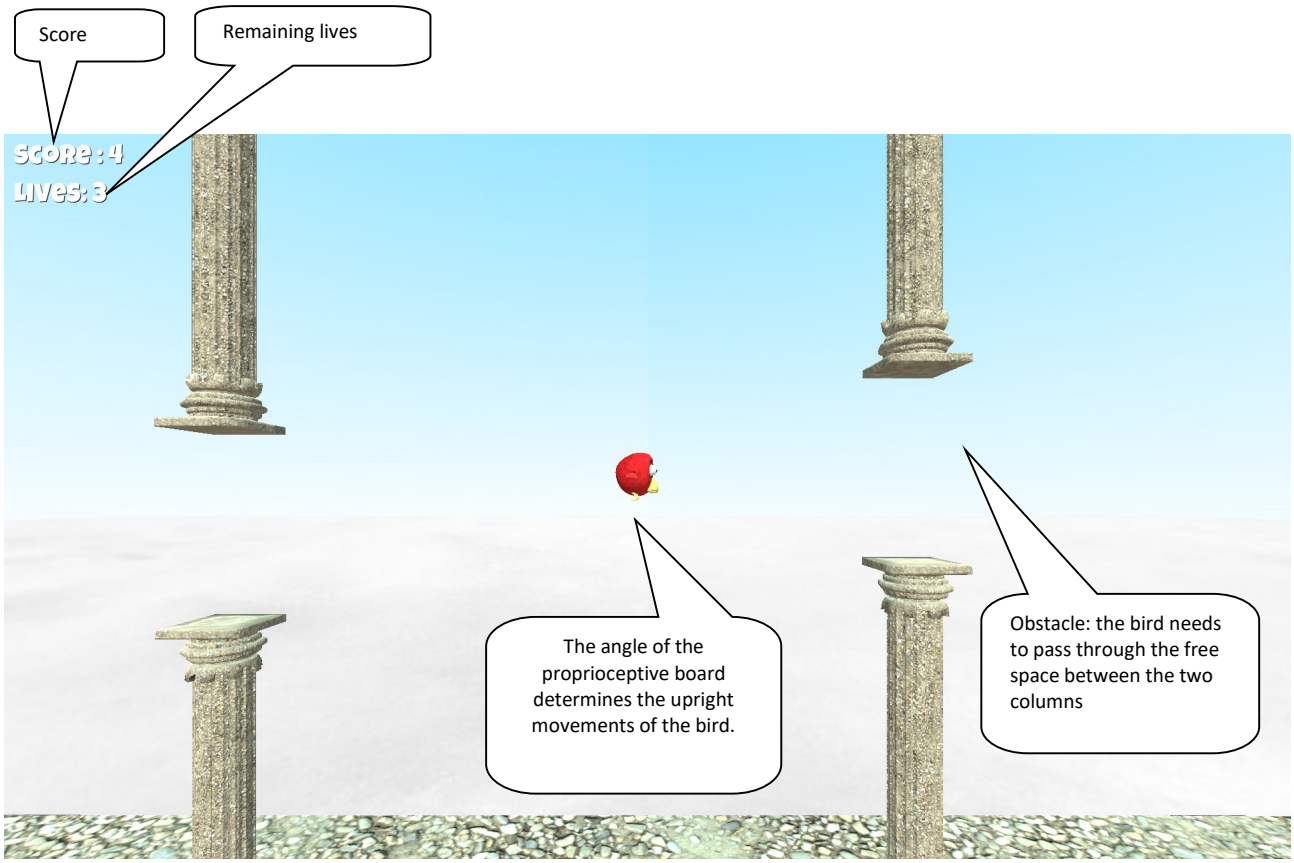
When you select this game, you will obtain the main menu. Just click with the mouse to start the game.

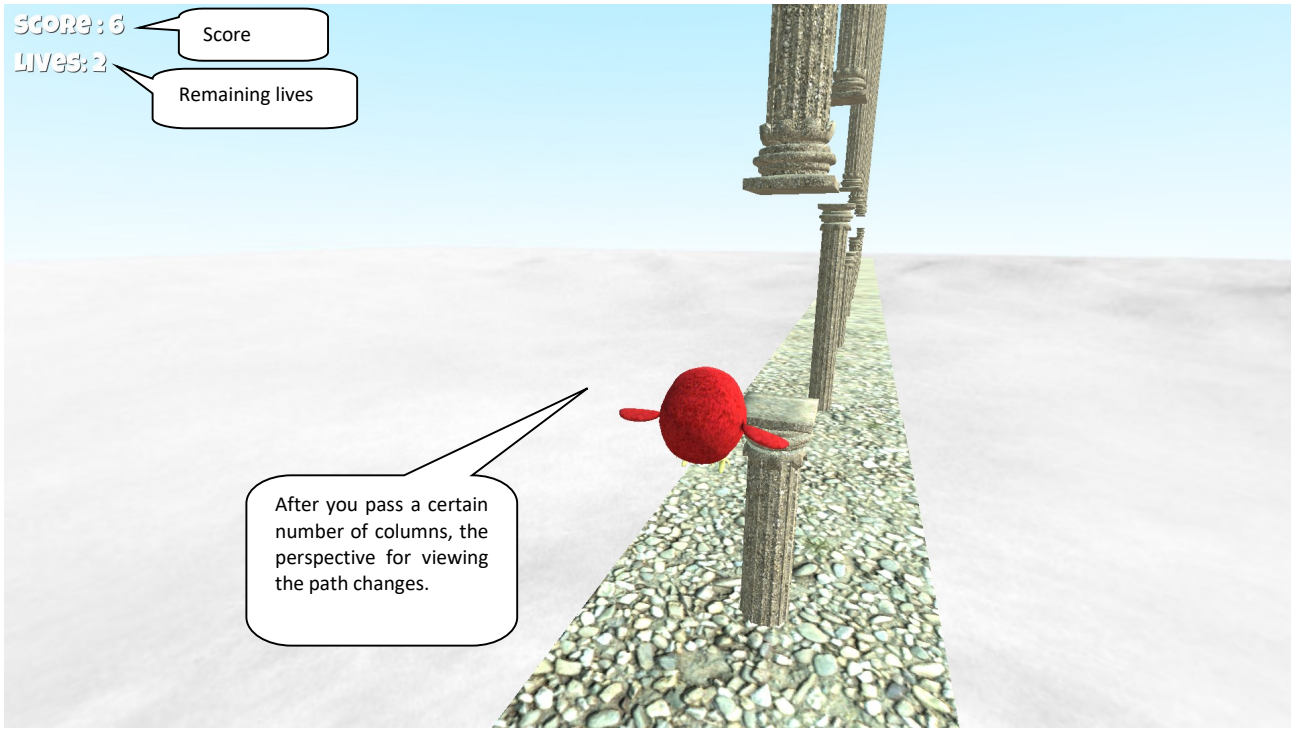


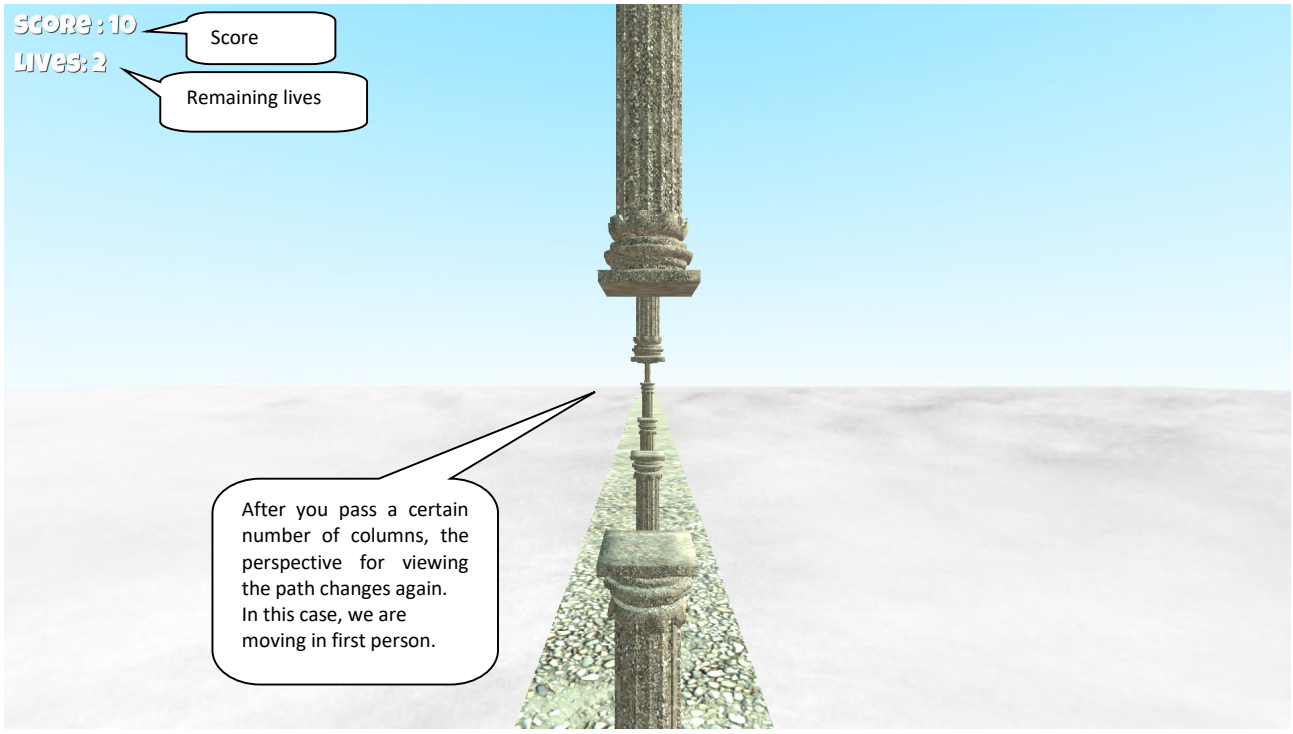
Now you can start playing. If the proprioceptive board is connected to the pc you can use it as controller, otherwise you can use the mouse left button.

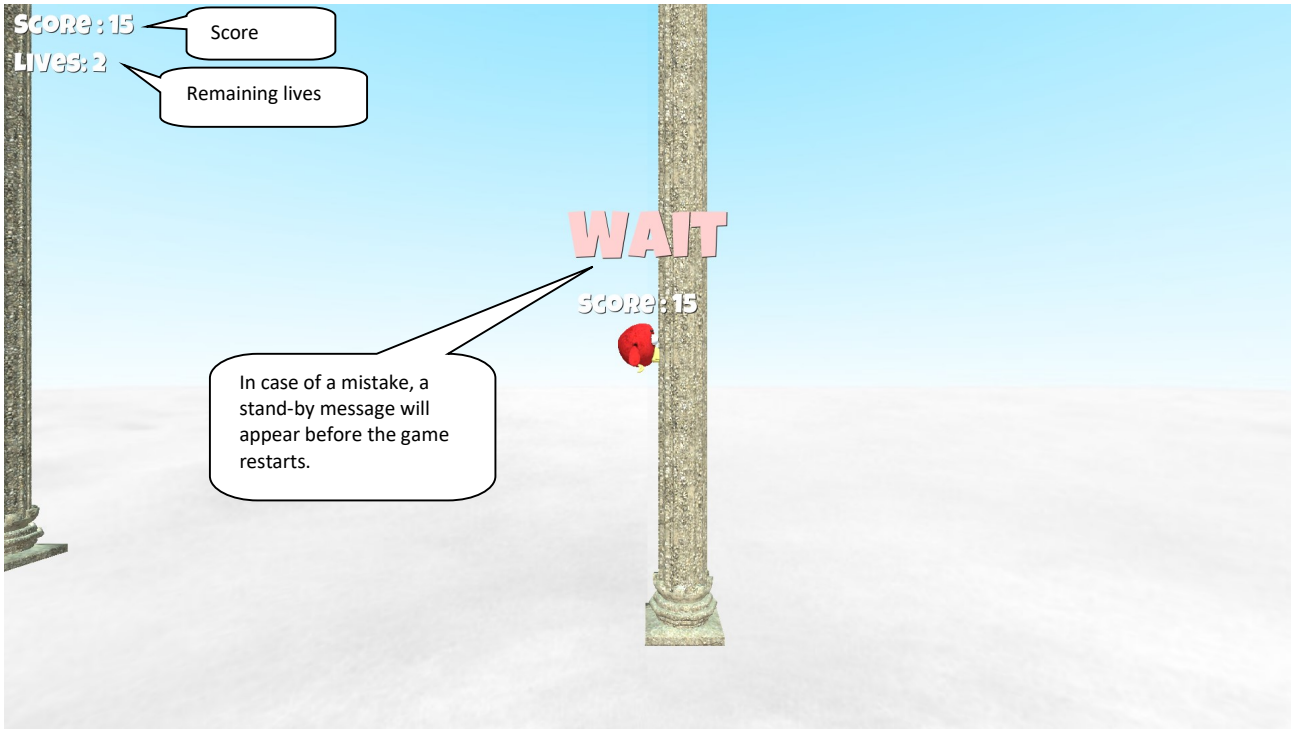
The goal is to guide the flappy bird through a path with obstacles: each obstacle is a marble column as tall as the full size of the screen but with a free passage at a random point along its width.
Every time you overcome an obstacle, your score increases. You can fail three times maximum hitting the columns, after which the game is over. Every time a column is hit, you will receive a short stand-by message on the screen, giving you the opportunity (if you still have lives available) to tread again the path from the beginning. You can stop the match ahead of time by clicking “ESC”.

At the end of the match, the final score will be displayed but it will not be saved. If you want to keep playing, you will have to click again with the left button of the mouse; otherwise, you may exit the game by pressing the key “ESC”.


Score
Remaining lives
Score : 4
Lives: 3
The angle of the proprioceptive board determines the upright movements of the bird.
Obstacle: the bird needs to pass through the free space between the two columns

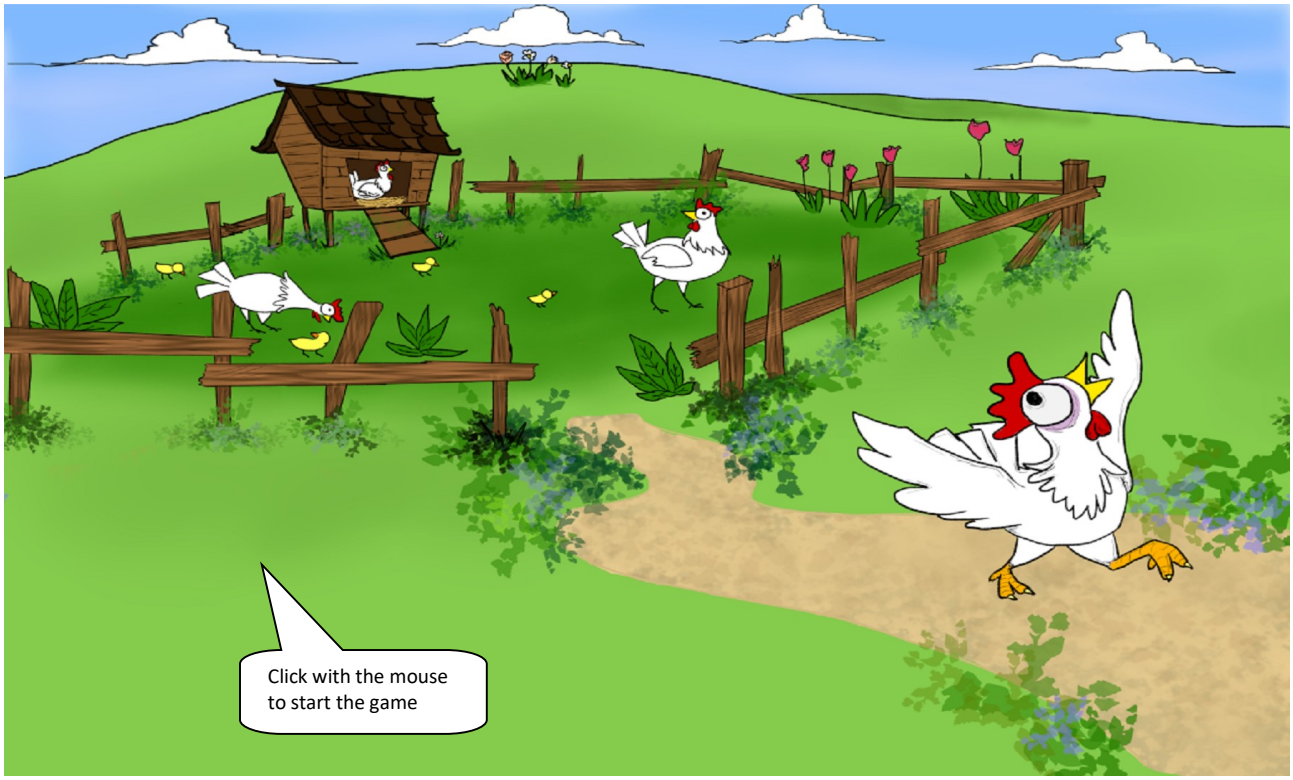

Score : 6
Lives: 2
Score
Remaining lives
After you pass a certain number of columns, the perspective for viewing the path changes.


SCORE : 10
LIVES: 2
Score
Remaining lives
After you pass a certain number of columns, the perspective for viewing the path changes again. In this case, we are moving in first person.


SCORE : 15
LIVES: 2
Score
Remaining lives
WAIT
SCORE: 15
In case of a mistake, a stand-by message will appear before the game restarts.

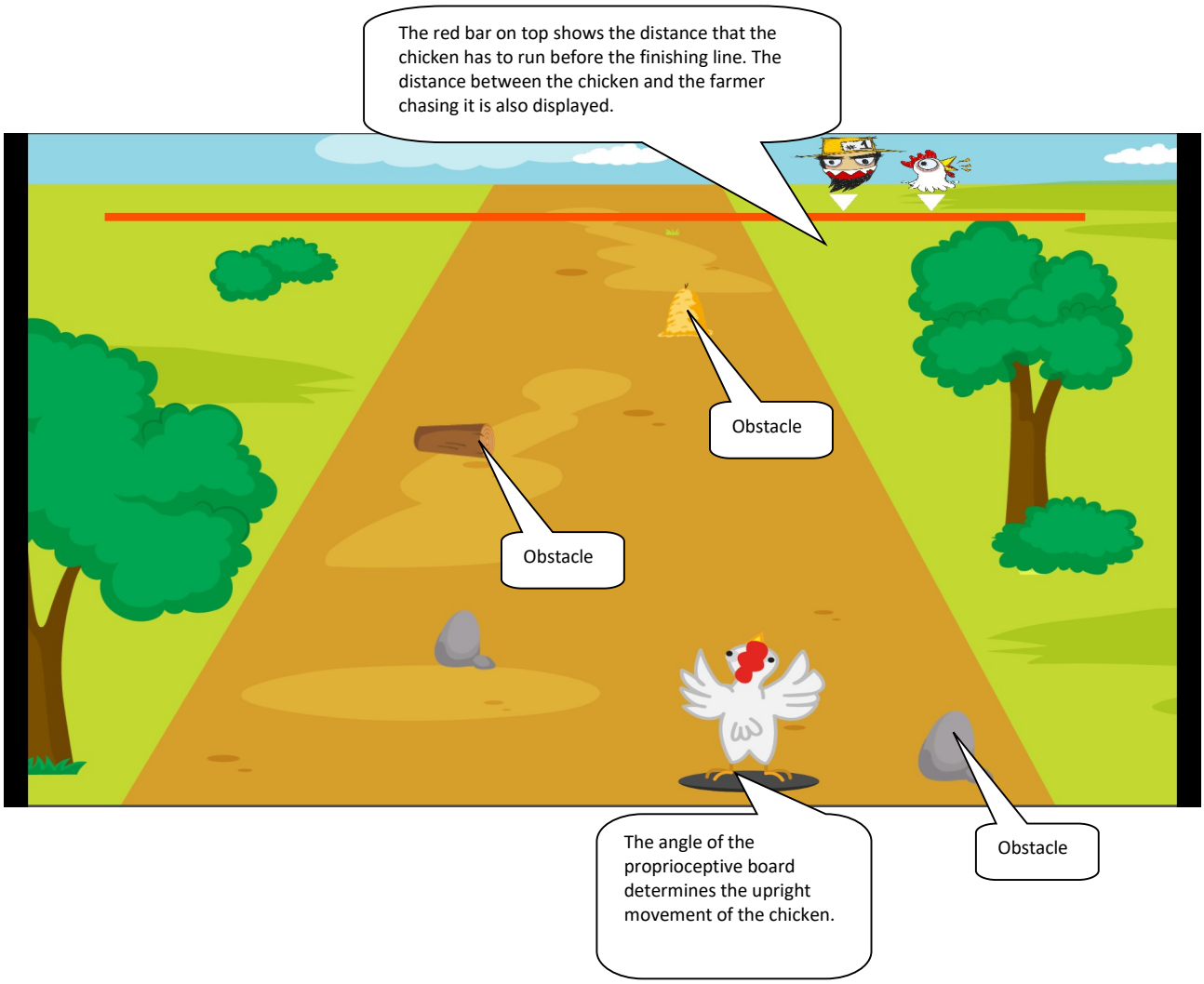
4.9.6. CHICKEN ON THE RUN

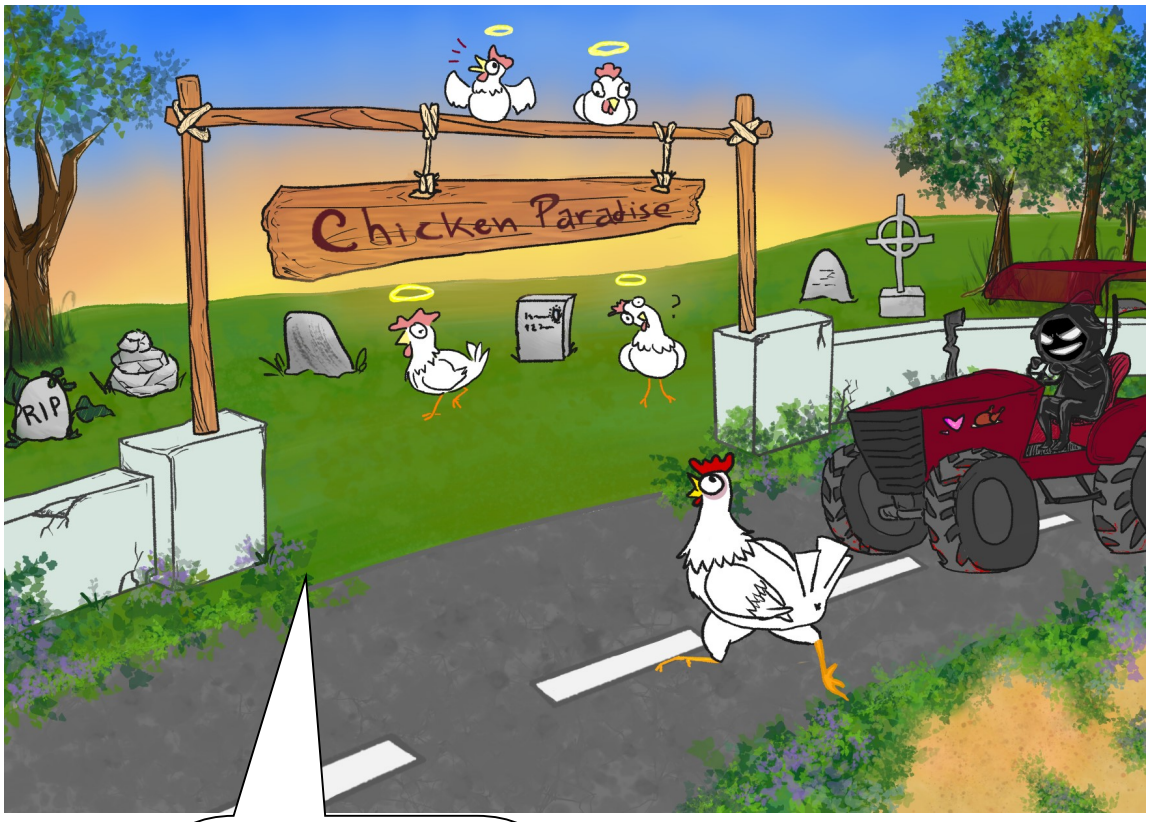
When you select this game, you will obtain the main menu. Just click with the mouse to start the game.



At this point, it is possible to play. If the proprioceptive board is connected to the pc you can use it as controller, otherwise you can use the keyboard (left arrow, right arrow).

The goal of the game is to lead the chicken through a country path avoiding all the obstacles that will appear from time to time: rocks, heaps of hay and wood trunks. At the same time, the chicken runs away from the farmer, who wants to catch it and runs behindhand at a certain distance. The player needs to get away avoiding simultaneously all the obstacles along the path. Every time the chicken hits an obstacle, it will be delayed in its escape and will run more slowly: this will certainly help the farmer to catch up with it. There is no score in this game, as the main goal is to reach the end of the path and cross the finishing line (Chicken Paradise). The player can fail four times maximum hitting the obstacles, after which the game is over. You can stop the match ahead of time by clicking “ESC”.
At the end of the game, you will obtain two different screens, depending on whether you reached your final goal or not. Furthermore, you will visualize a window asking if you want to start a new game: simply use the keys “Y” or “N” respectively to confirm or exit. Otherwise, you can exit the game by clicking on the key “ESC”.


The red bar on top shows the distance that the chicken has to run before the finishing line. The distance between the chicken and the farmer chasing it is also displayed.
Obstacle
Obstacle
The angle of the proprioceptive board determines the upright movement of the chicken.
Obstacle

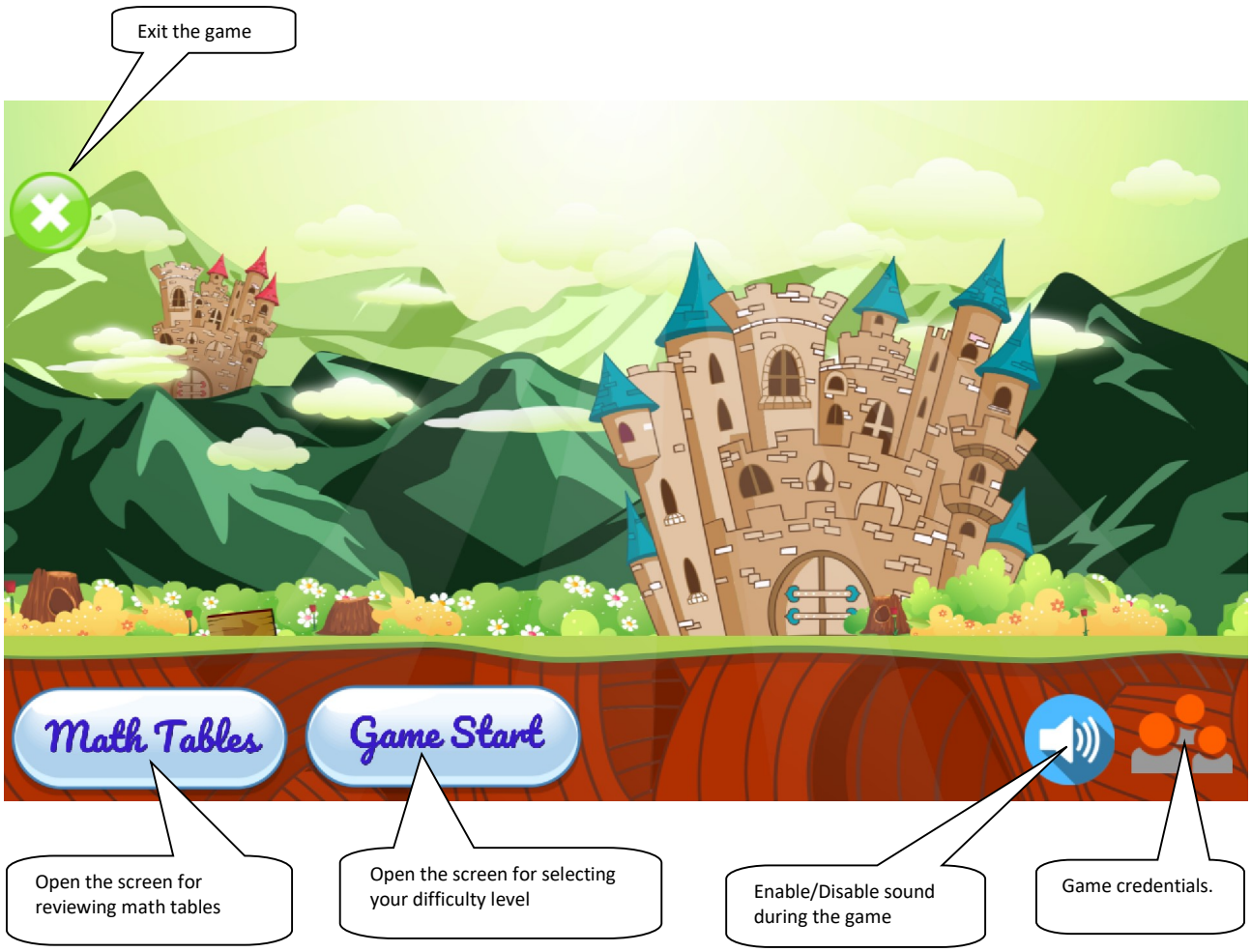


You win!!!
You reached the Chicken Paradise.
In the bottom left, you can view the time taken to finish the path.

You lost!!!
The farmer caught you. Click “Y” to play again or “N” to exit the game.

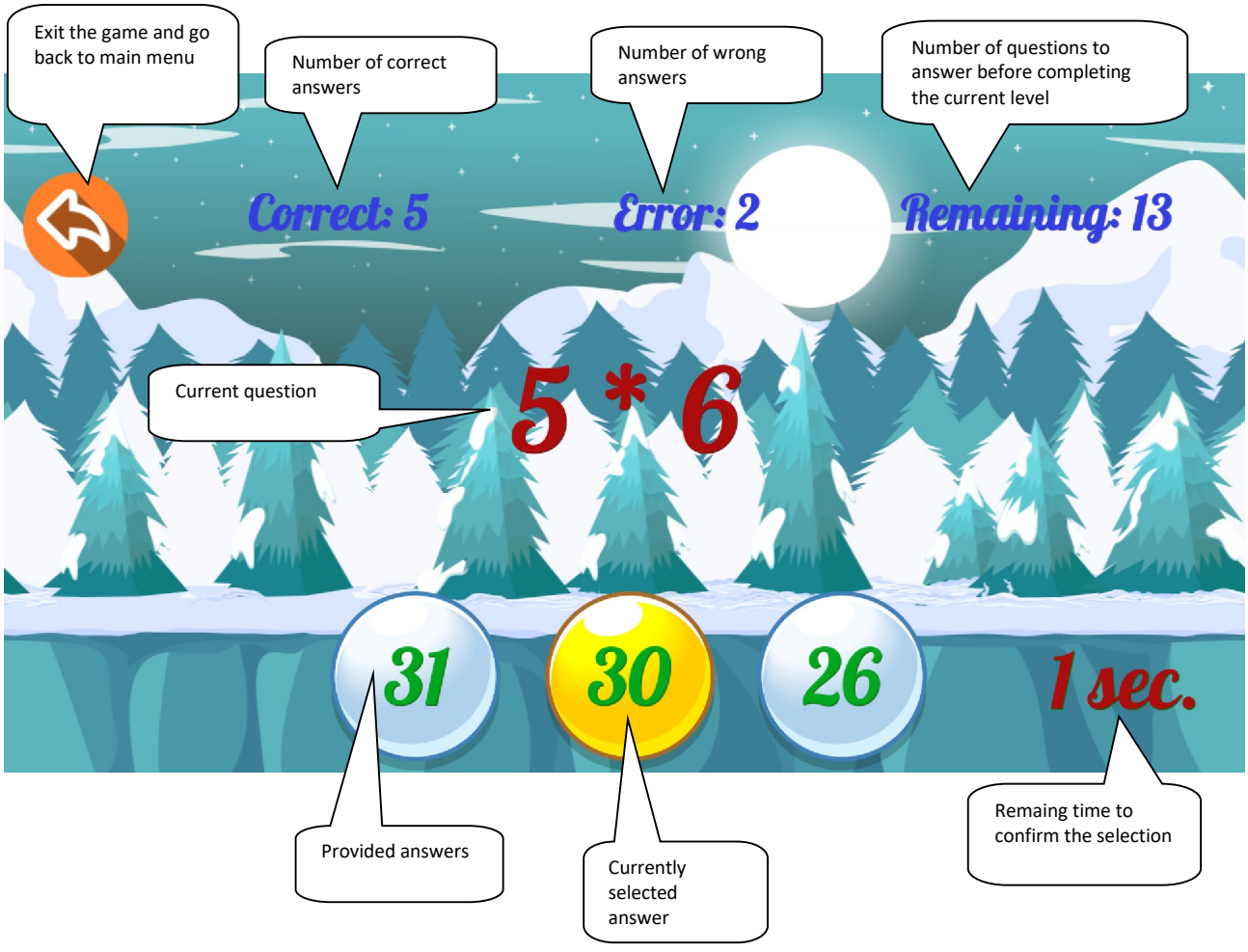
4.9.7. MATH TABLES

Once you select this game, you will obtain the main menu, from which you can carry out a few settings or make preliminary choices.


Exit the game
Math Tables
Game Start
Open the screen for reviewing math tables
Open the screen for selecting your difficulty level
Enable/Disable sound during the game
Game credentials.

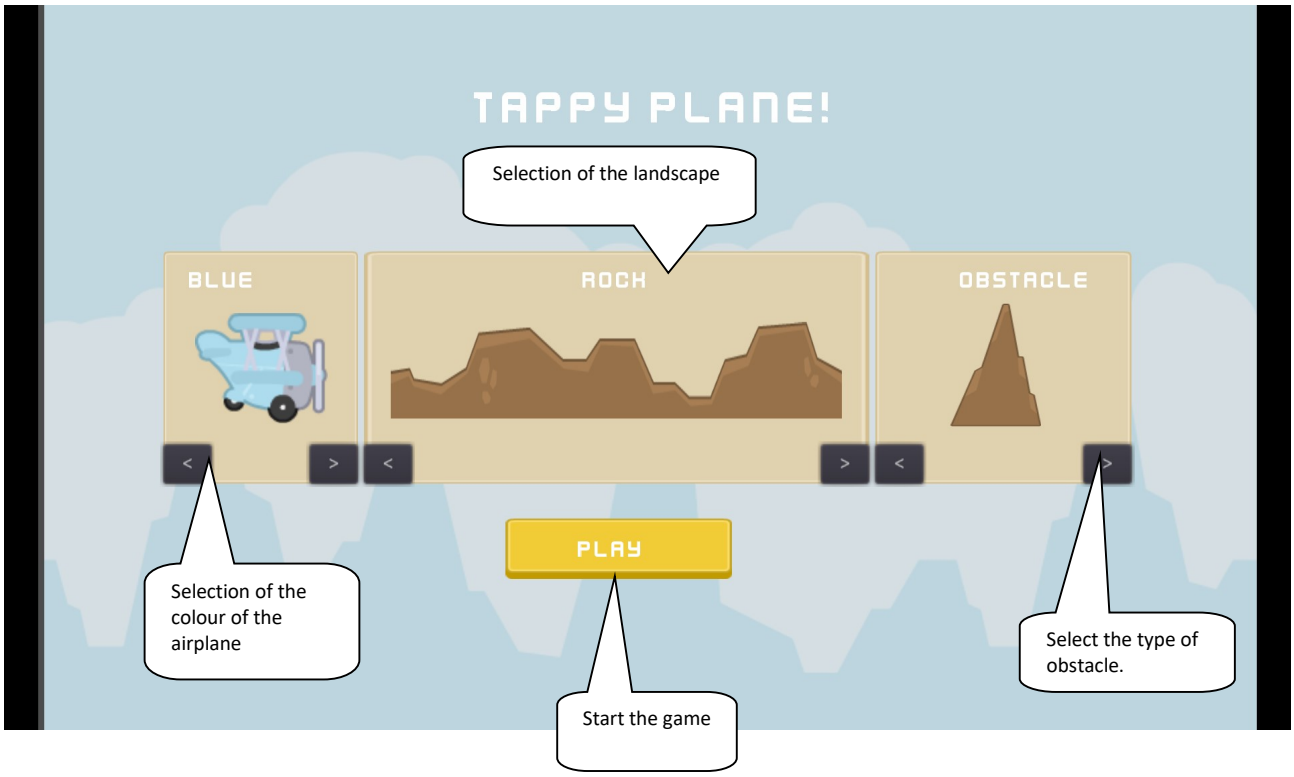
Once you click on the push button “Game Start”, you will obtain a menu from which you can select the difficulty level of the game. This game looks like a quiz: you choose a number between 1 and 10, every 4 seconds a question will appear in the middle of the screen with a basic math multiplication with the number you selected. In the lower part of the screen, you will view three possible answers. Only one is correct, though. The user will move the proprioceptive board (or use the mouse of the computer in case the board is not connected) and select the right answer, inclining it accordingly towards it: the answer currently selected will be easily recognizable as highlighted in yellow. At the bottom right, you will see a timer with a countdown: when time is up the last highlighted answer will be considered the final answer. Each answer given, both right or wrong, will be taken into account and displayed on top of the screen: the goal of the game is to provide all the right answers and move onto the next level, where the multiplication will go on with the following number. The player can fail three times maximum, after which the game is over. You can end the game beforehand by clicking on the key “ESC”.

x1
x2
x3
x4
x5
x6
x7
x8
x9
Choose the math table to start with
Back to previous menu


Exit the game and go back to main menu
Number of correct answers
Number of wrong answers
Number of questions to answer before completing the current level
Correct: 5
Error: 2
Remaining: 13
Current question
5 * 6
31
30
26
1 sec.
Provided answers
Currently selected answer
Remaing time to confirm the selection

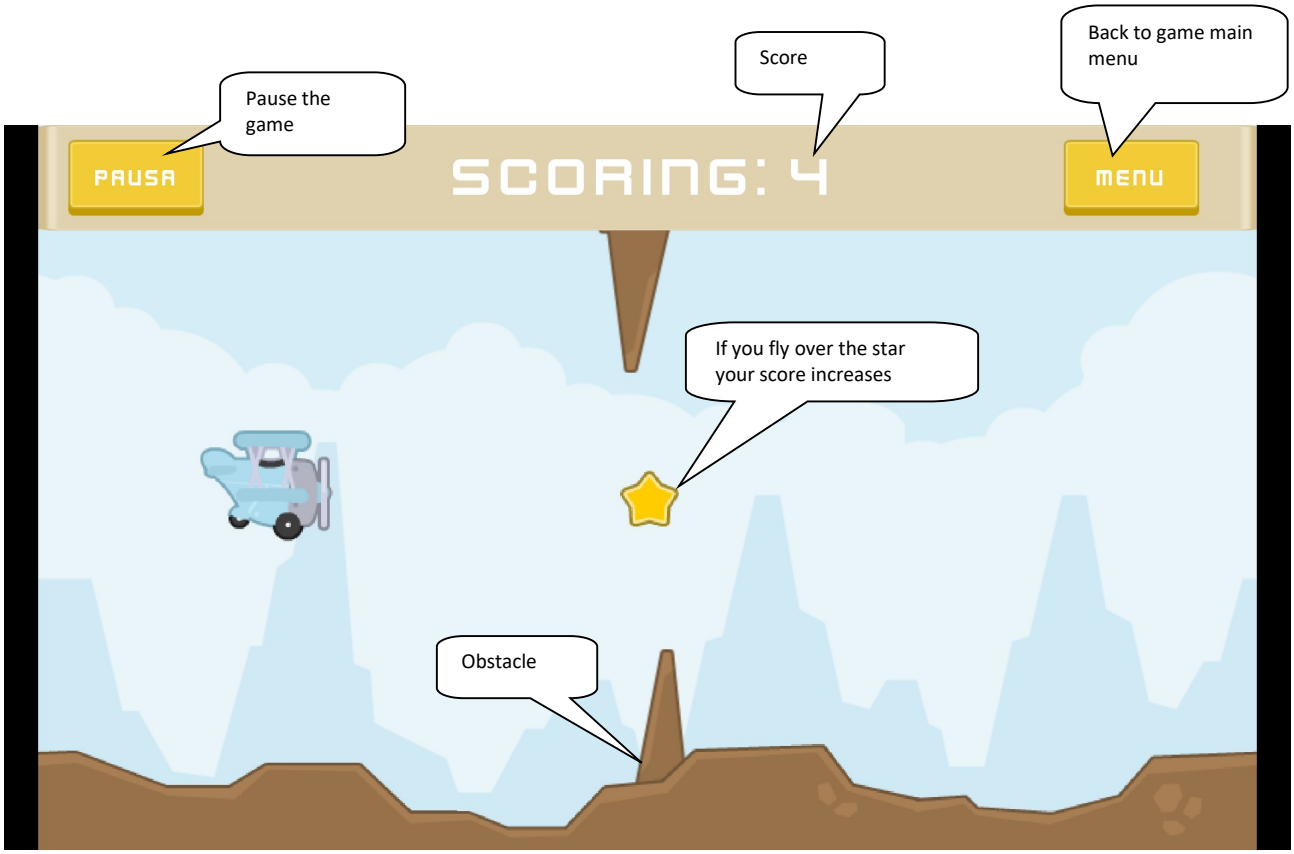
4.9.8. TAPPY PLANE

Once you select this game, you will obtain the main menu from which you can carry out basic graphic settings.



When you click the push button “PLAY”, you will launch the game screen and you will immediately start playing. If the proprioceptive board is connected to the pc you can use it as controller, otherwise you can use the mouse left button.

The main goal is flying the plane through a route full of obstacles: each impediment is given by two opposite spurs of rock, one at the bottom, the other at the top, and at distance so that there will be a free passage for the plane. Within this gap, there will also be a colourful star, assigning extra points if touched. The player has to avoid all obstacles and collect as many stars as possible to increase the score. One mistake only is admitted, after that, the game is over. When you fail, you will see a screen displaying the final score and enabling to start a new game. It is always possible to end the game beforehand by clicking on the key “ESC”.


Pause the game
Score
Back to game main menu
PAUSA
SCORING: 4
MENU
If you fly over the star your score increases
Obstacle

GAME OVER
SCORE: 12
Final score
Start a new game
RESTART

5. ROUTINE MAINTENANCE

Please note that Libra must be disconnected from the PC before carrying out any operation that involves opening the cover at the bottom of the device.

EXTERNAL CLEANING

Precautions:

- Turn off the PC.
- Disconnect the cable between Libra and the PC. By doing so, take the opportunity to check the cable (see 2.3).
- Do not use solvents or any other solution containing abrasives;
- Dripping liquids shall have no harmful effect on Libra, however it is clearly good practice to avoid such possibility;
- Do not employ dry heat or high-pressure sterilisation systems.
- Clean the **painted surfaces** with a neutral liquid detergent.

6. TRANSPORTING THE DEVICE

Use the case supplied to carry the Libra board, taking care of placing the connecting cable inside the case.

Check that the sensor tumbler switch is in resting position before placing Libra inside the case.

Environmental conditions:

- Ambient temperature: [0 /+ 40] °C

- Relative humidity: [0 / 75] %

- Atmospheric pressure: [700 / 1060] mbar

7. PACKAGING

It is recommended to retain the original packaging. If you no longer have it, place everything in a suitable cardboard box and always appoint a specialized carrier for this type of transport.

8. DISPOSAL OF THE UNIT AT THE END OF ITS LIFE-CYCLE

At the end of its life-cycle, the device is generally replaced with a new one and the manufacturer will take care of its disposal.
Differently, the disposal of a no longer usable device must follow the regulations applicable for electric and electronic devices, WEEE Directive 2012/19/EU.

APPENDIX

Libra

Libra version is programmed to test the global balance and the risk of distortion.

……..

1. FUNCTIONAL STABILITY AND TESTS

1.1 Introduction

The distortion consists in a modification of the proprioceptive information that leads to a reduction in stability. Muscle strengthening helps in improving functional stability, and devices like **Libra** are useful for this purpose.

However, please note that the parameters and information provided have no medical and/or rehabilitation values.

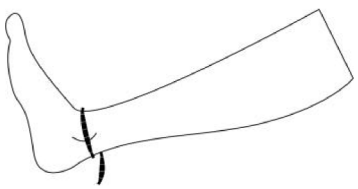
1.2 Parameters

BMI (Body Mass Index)
If the operator enters the information on height and weight, the software automatically calculates this parameter accordingly. It has been shown that if the BMI is higher than normal, or worse, if it gives an obesity result, the risk of distortion increases considerably. If that is the case, it follows that it would be better to recommend the patient to lose weight to reduce such risk.

Medical File
The medical file includes control indicators that allow following the evolution of various parameters. Such indicators must be reliable, reproducible and most importantly should enable to analyze all types of deficiency and inability.

Pain
It is measured with an analogic visual scale (100 mm) (EVA). The test will be completed spontaneously with and without loads (where leaning is possible).

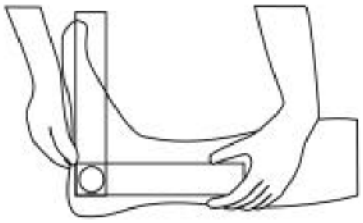
Edema
The edema is examined by measuring the bimalleolar perimeter in centimeters, which is then compared with that of the contralateral part. It is thus possible to highlight the presence of a hematoma as well as its state.



Measurement of ankle edema with measuring tape placed on the external malleolus.

Mobility
If the patient is able to take the tests, the mobility of the ankle is assessed in both load and unloading conditions:

The mobility of the tibio-tarsal joint is assessed during active and passive movements, by goniometry in unloading condition or by comparison with the contralateral part.



Under loading conditions, we recommend a functional approach of the dorsal flexion with the squatting test. Stiffness of the tibio-tarsal joint prevents the heel from resting on the ground.

Under load conditions, the dorsal flexion test allows quantifying the stiffness of the tibio-tarsal joint. **The average distance "d" is 13.8 cm.** The dorsal flexion test under load condition is the only quantitative approach that reproduces ankle mobility. The aim is to measure the maximum dorsal flexion of the ankle. The patient stands in front of a wall and has to bend the knee pushing the patella towards the wall while keeping the heel resting on the ground. When the dorsal flexion of the ankle is at its maximum, the distance < d > (in centimeters) is measured between the end of the big toe and the wall. In this position, it is also possible to measure the alpha angle between the tibia and the vertical line using an inclinometer, whose central point is 15 cm below the tibial tuberosity. Take these measurements first on one side and then on the other.

Dorsal flexion test under load condition. The distance d is measured in centimeters and corresponds to the greatest possible distance between the big toe and the wall when the knee touches the wall and the heel rests on the floor.

Functional Stability

If the conditions of the patient allow it, we suggest you assess the functional stability of the ankle encouraging the patient to perform the following exercises first with the eyes open and then closed:

- Maintain unipodal support
- Stand on tiptoe in unipodal support
- Do little jumps with feet together
- Do little jumps on alternate feet
- Jog along
- Jump with feet together
- Jump on one foot

Daily activities
If the conditions of the patient allow it, it is possible to evaluate what activities the patient can carry out in his everyday life after an ankle sprain asking whether s/he can perform the following exercises:

- Go up and down the stairs
- Walk uphill and downhill
- Walk on uneven ground

1.3 Test SDG – Stability Test, Spielman-De Gunsch

This test allows assessing the overall stability and consequently the risk of falls. The lower the level of stability, the higher is the risk of fall, especially in the case of elderly patients. The test may be reliable and reproducible only if performed under precise conditions.

1.3.1 Standard test conditions

Board
For testing the lateral balance in bipedal standing position, we placed the board in the so-called "parallel" position. We decided to use the board without further thicknesses, namely with the tilting part with a radius of 5 cm (d=10 cm). This decision comes from the need of producing the greatest possible degree of difficulty in order to observe the greater number of variations in results.

Conditions of memorisation

Three types of situation were defined:

- "Feedback": the patient keeps the balance on the board, with eyes open, with monitor feedback and sound (full mode).
- "Still Target": the patient keeps the balance with eyes open, staring at a still point on the monitor.
- "Closed eyes": the patient maintains balance with closed eyes.

The patient stands in bipedal standing position:

- Properly position the bare feet on the test mat (the rear end is at 5 cm from the posterior edge of the board, the heels are 5 cm apart and the feet with a 30° span).
- With the hands on the hips, allow the knees to bend as to reach the ideal angle to standardize the position.

- Start each one of the three exercises leaning the balance board towards the right.
- Each single exercise must last for 30 seconds.
- During the memorization phase, the patient absolutely must not speak, to remain better focused. During the resting phase, however, it will be possible to talk and relax the body, always standing on the board and keeping the position of the feet.

Recommendations:

- Try to remain within the route, slightly bend your knees and put your hands on the hips. Maintain this position throughout the entire exercise; do not speak during the test to better concentrate upon the graphic or the cursor. You will hear an increasingly acute sound in case you lose your balance and exit the route (feedback situation).
- Same as above staring at a still point on the screen.
- Same as above with closed eyes.

Environment

- Central (or foveal) vision: the visual target, that is the screen of the computer, is 1-1,5 m far from the patient and at eye level (the gaze has to be in a horizontal line).
- Peripheral vision: we suggest you place the screen in a room with no vertical marks on the walls. In this way, the peripheral vision will be limited and reproducible. The operator responsible for the test will have to be careful and not enter the patient's visual field.
- Sound environment: the room will have to be as silent as possible and the presence of an operator and a patient is essential to carry out the test.

Outcomes

We suggest referring to a scale of values to classify and assess the patient and his progress.
We determined five levels of stability, based on the overall score during the three memorization situations:

	Feedback	Still target	Closed Eyes
Excellent	[9 – 11[	[9 – 11[	[13 – 14[
Good	[11 – 12,5[	[11 – 12[	[14 – 15[
Acceptable	**[12,5 – 14[**	**[12 – 13[**	**[15 – 16[**
Poor	[14 – 15[	[13 – 14[	[16 – 17[
Very Poor	[15 – 16[	[14 – 16[	[17 – 18[

Interpretation

The test at closed eyes allows observing whether the stability issue relates to an eyesight problem or not. For instance, if the patient obtains a "poor" result in feedback situation but "good" in closed eye situation, it means that the visual information disturbs his stability and it is necessary to take action in that sense.
In case the results are negative, that is "very poor", we recommend including the use of video games to train the balance and strengthen the muscles, following the progression below:

- Lateral position
- Transverse position
- Left and right 45° position.

Obviously, always start with a 40 cm "gauge" first, and then move down to 20 cm and eventually 10 cm (no gauge).

1.4 Test CDG – Index of distortion, Cauquil-De Gunsch

This test allows assessing the stability of the ankle and therefore the risk of sprain by comparing the work of the internal and external sections. Regardless of the specific problem, this test enables to evaluate the risk of distortion and to consider precautionary exercises if the patient does not reach an acceptable result. The more negative the result, the more the risk of distortion is likely to arise. In order for the test to be reliable and reproducible, it will have to be performed under precise conditions.

1.4.1 Standard test conditions

The conditions are the same as in the SDG Test, except for the differences listed below:

- The gauge used is 40 cm
- Position the bare feet accurately on the test mat taking the central line as reference. In unipodal standing position, the central line must go through the second and third finger.
- The hands are on the hips, and the knees must be free to bend to reach the ideal angle and to stabilize the position.
- Start each one of the three exercises with the balance board tilted towards the right.
- Each single exercise must be performed for 30 seconds.
- Three types of situation were defined:
  - Parallel stance
  - Single leg stance, on the left foot
  - Single leg stance, on the right foot

With reference to the results, only the ratios highlight a distortion (especially in unipedal stance) and must therefore be considered:

	Ratio
Excellent	< 65 %
Good	[65 - 85[
Acceptable	***[85 – 110[***
Poor	[110 – 125[
Very poor	> 125

In case of negative results, that is very poor, we recommend including videogames to train the balance and strengthen the muscles, keeping to the following progression: always begin with the 40 cm “gauge”, then move down to 20 cm and eventually 10 cm (no gauge).

***WARNING*:** the results are exclusively a means and they never have to be considered an absolute truth. It is always necessary to relate and integrate them to a comprehensive clinical picture before drawing to a conclusion. Never disregard the diagrams, which ought to be analysed as well. It might happen that a patient correctly completes the CDG test obtaining an unsatisfactory result, and this is because **this method of assessment is not intended to provide diagnosis or clinical evaluations, but rather to offer a recommendation**. However, evaluation errors may be mitigated by putting together the clinical evaluations, the results and the diagrams.

In conclusion, the results are but an indication and must be interpreted according to the clinical information of the patient and completed with a wider analysis of the data and diagrams.

Trunk stability

Libra also enables intervening on the trunk stability. Just position the board on a raised support (like a stool for example), and have the patient sit on it.

Contraindication

In order to use Libra, the patient has to experience no pain when:

- walking normally for 5 meters and come back
- Walking on tiptoes for 5 meters and come back
- Walking on the heels for 5 meters and come back

Frequency, number and duration of the sessions

The duration and frequency of the training depend on the evolution charted by the indicators. Frequency shall be sufficient to enable the patient to resume all social and professional activities as early as possible.

When to end the training

The chronological evaluation of the monitoring indicators (pain, oedema, mobility, strength, functional stability, daily activities) allows establishing when the training has been completed in relation to the targets previously agreed with the operator and patient. Such targets ought to consider the specific activities of the patient (social, professional or sports activities).

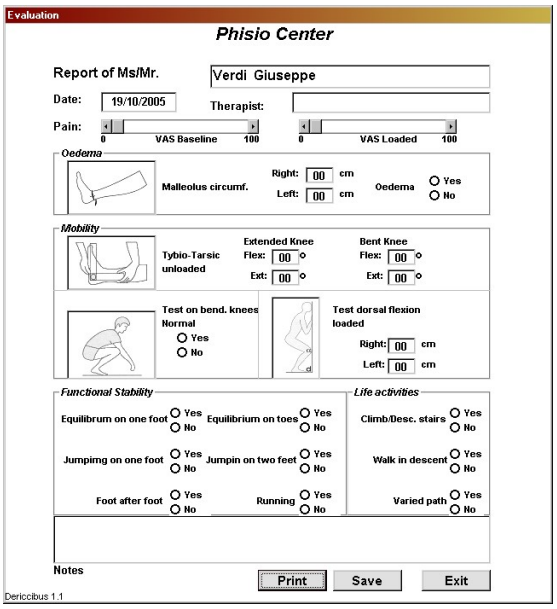
As far as the indicators are concerned, the pain must be zero, the results achieved must equal those of the contralateral part and the functional stability test as well as the day-to-day activities test must be overall positive.

As far as Libra is concerned, the tests SDG and CDG must produce at least “acceptable” results. The test reports provided in the CDG test must be the same for both parts.

2. EVALUATION

If you click on the icon

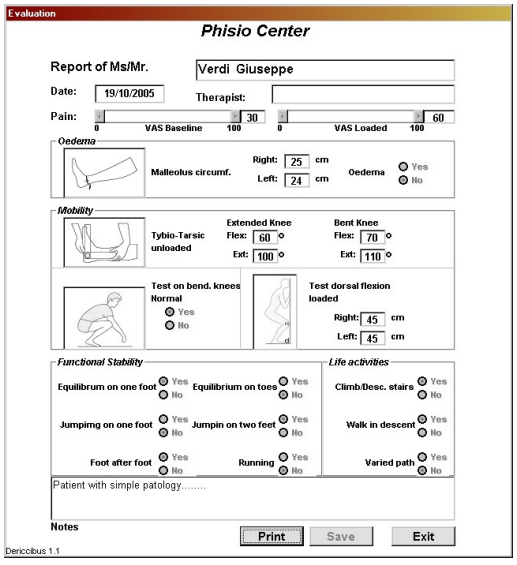
you gain access to the evaluation compilation file.



The heading with the name of the center, of the patient, and the date are entered automatically.
The therapist must type in manually his/her name in the relevant text box.
A series of boxes expressing a functional evaluation of the patient up to that date follows immediately below.
Firstly, the VAS (Visual Analogical Scale) pain index: spontaneous and under loading conditions. The VAS index must be entered on a scale from 0 to 100 where 0 indicates no pain and 100 the maximum pain felt. The scale does not show any figures, because the evaluation is precisely intended to be subjective and must not be compared to other data related to previous cases or other patients. The number will appear later in the print of the report. The operator will thereafter take care of entering a series of measurements and assessments, which meaning is clear from the picture. The fields requiring a "yes" or "no" answer may be completed by simply ticking the relevant box; please be aware that if no choice is made, the program will automatically select the box with the "no" value.
Ultimately, the field "note" allows writing additional free comments in a maximum of 6 lines.
The key "Print" allows printing the page as it is on the screen, the key "Save" saves the file for future consultation. It is possible to complete and save an infinite number of assessments for each patient but just one report per day can be saved for the same patient, as the reports are identified, for future consultations, by the patient code and the date of record.

By clicking on the icon

you open the window for selecting the reports, ordered by the date of compilation (the date has the format YYYY/MM/DD, that is year – month – day). As you can see from the picture, the parameter VAS is now shown as a numerical value. The report will only open for consultation and it is not possible to modify the file but read it and – if needed- print it, exclusively.



3. PRESET PROGRAMS: SERIES OF PRESET EXERCISES INCLUDED IN THE SOFTWARE

The software includes several programs with a series of preset exercises. These exercises have an increasing difficulty level from 5 to 9.

PROGRAM	NUMBER OF EXERCISES	PROFILE	FOOT EVALUATES	LEVEL
1	6	Rectilinear	Right and bilateral	5 and 6
2	6	Rectilinear	Right and bilateral	5 and 6
3	8	Sinusoidal	Right and bilateral	7
4	8	Sinusoidal	Right and bilateral	8
5	8	Square wave	Right and bilateral	9
6	6	Rectilinear	Left and bilateral	5 and 6
7	6	Rectilinear	Left and bilateral	5 and 6
8	8	Sinusoidal	Left and bilateral	7
9	8	Sinusoidal	Left and bilateral	8
10	8	Square wave	Left and bilateral	9

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easytech

DECLARATION OF CONFORMITY

Directive 2011/65/UE
Directive 2001/95/CE

The product

LIBRA

CE

Complies with the provision of Directive 2011/65/UE of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronical equipment, published in the Official Journal of the European Union of 01 July 2011 and implemented in Italy with Legislative Decree n.27 of 4 March 2014 and updated by Directive 2015/863.

Complies with provision of Directive 2001/95/CE of the European Parliament and of the Concil of 3 December 2001 oh general product safety, published in the Official Journal of the European Union of 15 January 2002 and implementd in Italy with Legislative Decree n. 172 of 21 May 2004 and updated with D.lgs n. 206 of 6 Secptember.

Borgo San Lorenzo, 02/09/2019

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